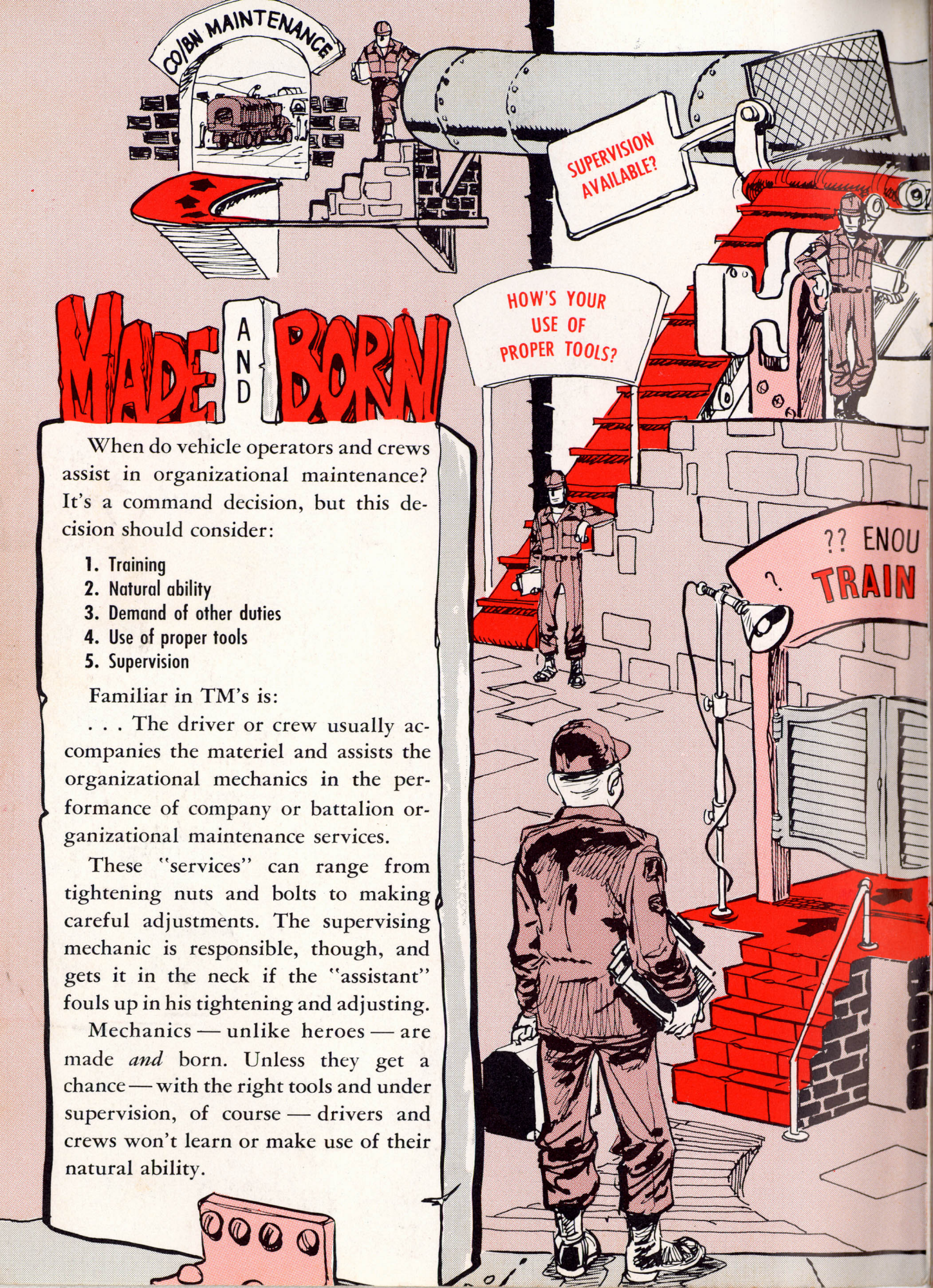
Issue 169
PS
1966 Series
THE PREVENTIVE MAINTENANCE MONTHLY
"..YOUR REQUEST, DATED OCT 4, 1966, FOR MATERIAL HAS BEEN RETURNED FOR THE LACK OF THE FOLLOWING INFORMATION:
1. FSN, NOT LEGIBLE
2. NO TM REFERENCE
3. UNABLE TO READ...PLEASE PRESS ON PEN...
ETC., ETC., ETC.
Yours
S. Claus
Dear Willie
S. Claus
Will Eisner



MADE AND BORN

When do vehicle operators and crews assist in organizational maintenance? It's a command decision, but this decision should consider:

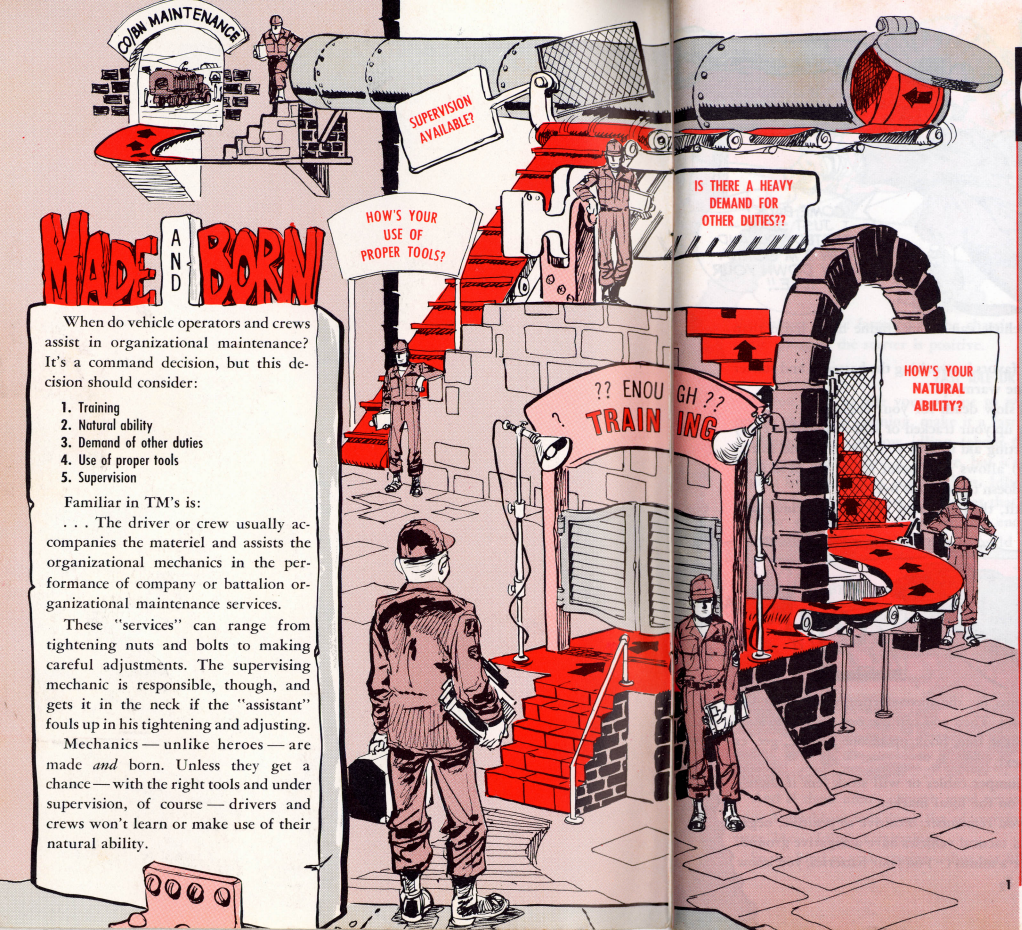
1. Training
2. Natural ability
3. Demand of other duties
4. Use of proper tools
5. Supervision

Familiar in TM's is:

. . . The driver or crew usually accompanies the materiel and assists the organizational mechanics in the performance of company or battalion organizational maintenance services.

These "services" can range from tightening nuts and bolts to making careful adjustments. The supervising mechanic is responsible, though, and gets it in the neck if the "assistant" fouls up in his tightening and adjusting.

Mechanics — unlike heroes — are made *and* born. Unless they get a chance — with the right tools and under supervision, of course — drivers and crews won't learn or make use of their natural ability.



MADE AND BORN

When do vehicle operators and crews assist in organizational maintenance? It's a command decision, but this decision should consider:

1. Training
2. Natural ability
3. Demand of other duties
4. Use of proper tools
5. Supervision

Familiar in TM's is:

. . . The driver or crew usually accompanies the materiel and assists the organizational mechanics in the performance of company or battalion organizational maintenance services.

These "services" can range from tightening nuts and bolts to making careful adjustments. The supervising mechanic is responsible, though, and gets it in the neck if the "assistant" fouls up in his tightening and adjusting.

Mechanics — unlike heroes — are made *and* born. Unless they get a chance — with the right tools and under supervision, of course — drivers and crews won't learn or make use of their natural ability.

P★S

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE **PREVENTIVE MAINTENANCE** MONTHLY

Issue No. 169 1966 Series

IN THIS ISSUE

GROUND MOBILITY

Starting, Idling	2-3	5-Ton Truck	8-9
M-Series Truck MWO	4	M543, M543A	9
M151	4	M-60 Tank	
Turn Signals	5		10, 11, 12, 14-15
M49C	6	M577, M577A	13
M107, M110	6, 14	M48A3 Tank	14-15
¾-Ton Truck	7	MF510 Heater	15

FIREPOWER

M2 Machine Gun	16-17	M14 Rifle	21
SP Weapons	18	Arms Lube	22-23
106-MM Rifle	18	Blank Ammo	22
M53 Sight Unit	19	Tire Cross Chains	23
Tube Arty	19	Hawk	24, 25, 26, 27
MG Mounts	20		

AIR MOBILITY

Aircraft Tools	37	Restraint Equip	41
U-8	38-39	ID Tape	42-43
Oil Drain Cart	40	Conditioner	43

COMMUNICATIONS

AN/MPQ-29	44-47	IM-174 Radiacmeter	54
AN/ARA-31 Ant	48	Cold Weather Tape	54
C-1611 ( )/AIC	49	AN/VIA-1 Intercom	55
UH-1	49	C-980/U Connector	55
Test Set	50-52	KA-30A Camera	56
H-33PT Handset	52	AN/GRR-5	57
S-144 Shelter	53	AN/GRC-19	57
RT-246, RT-524	53		

GENERAL AND SUPPORT

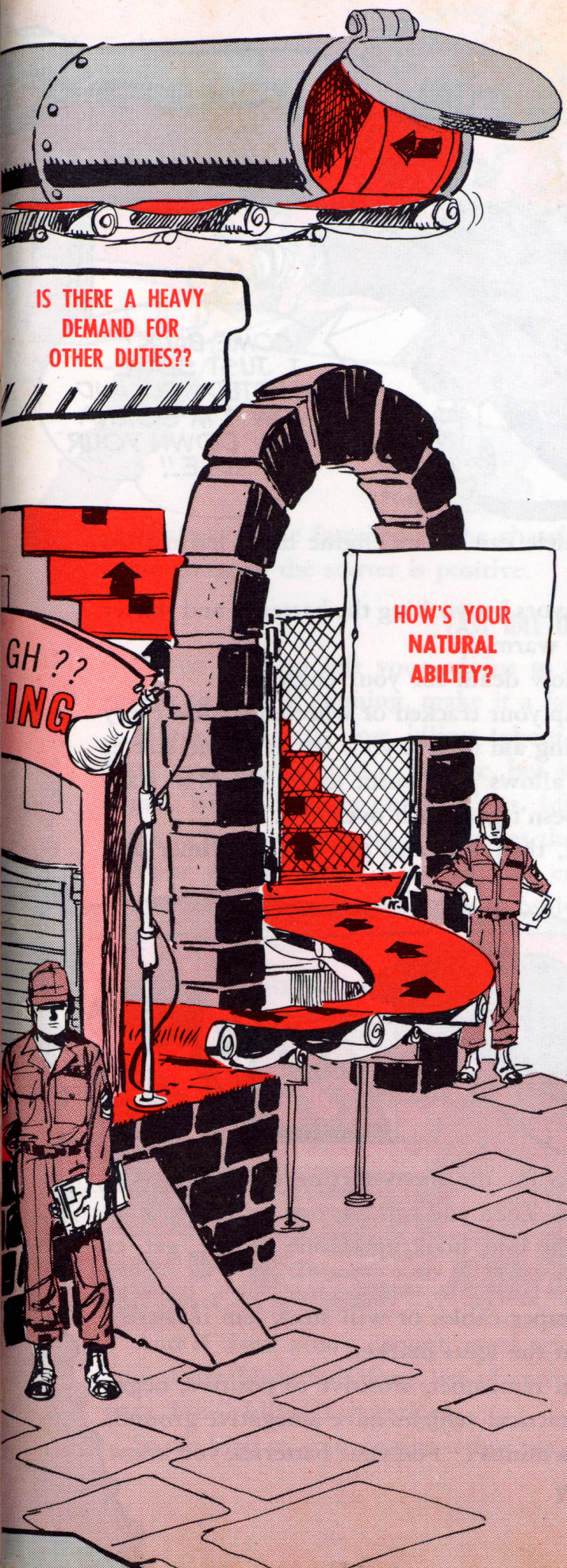
DA Form 2408-10	58-60	Airlift Repair	64
ESC	61	Helmet Liner	64
Diesel Fuel	62-63	Publications	28
Supply	4, 5, 6, 9, 11, 14, 15, 21, 22, 23, 25, 27, 37, 43, 46, 48, 49, 53, 54, 55, 57, 64		

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 19 February 1965.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121



PS

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE **PREVENTIVE MAINTENANCE** MONTHLY

Issue No. 169 1966 Series

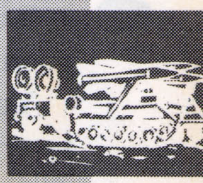
IN THIS ISSUE

GROUND MOBILITY

Starting, Idling	2-3	5-Ton Truck	8-9
M-Series Truck MWO	4	M543, M543A	9
M151	4	M-60 Tank	10, 11, 12, 14-15
Turn Signals	5	M577, M577A	13
M49C	6	M48A3 Tank	14-15
M107, M110	6, 14	MF510 Heater	15
¾-Ton Truck	7		

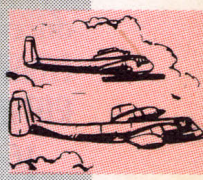
FIREPOWER

M2 Machine Gun	16-17	M14 Rifle	21
SP Weapons	18	Arms Lube	22-23
106-MM Rifle	18	Blank Ammo	22
M53 Sight Unit	19	Tire Cross Chains	23
Tube Arty	19	Hawk	24, 25, 26, 27
MG Mounts	20		



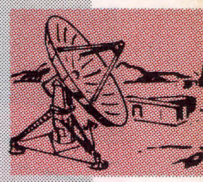
AIR MOBILITY

Aircraft Tools	37	Restraint Equip	41
U-8	38-39	ID Tape	42-43
Oil Drain Cart	40	Conditioner	43



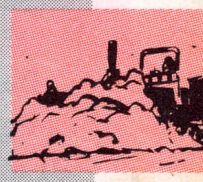
COMMUNICATIONS

AN/MPQ-29	44-47	IM-174 Radiacmeter	54
AN/ARA-31 Ant	48	Cold Weather Tape	54
C-1611 ()/AIC	49	AN/VIA-1 Intercom	55
UH-1	49	C-980/U Connector	55
Test Set	50-52	KA-30A Camera	56
H-33PT Handset	52	AN/GRR-5	57
S-144 Shelter	53	AN/GRC-19	57
RT-246, RT-524	53		



GENERAL AND SUPPORT

DA Form 2408-10	58-60	Airlift Repair	64
ESC	61	Helmet Liner	64
Diesel Fuel	62-63	Publications	28
Supply	4, 5, 6, 9, 11, 14, 15, 21, 22, 23, 25, 27, 37, 43, 46, 48, 49, 53, 54, 55, 57, 64		



Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 19 February 1965.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121

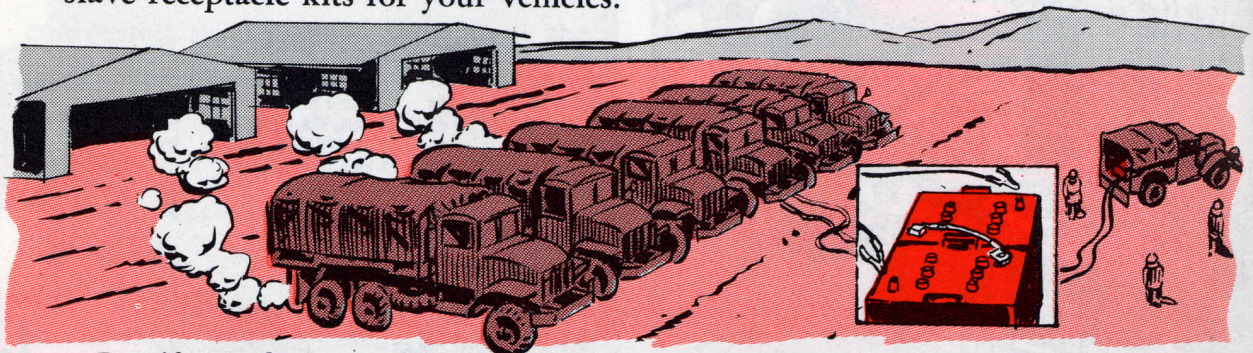
Babying your combat or tactical vehicle can do its engine more harm than good.

You're not doing your vehicle any favors by working the batteries and starter several times a night for a short engine warm-up.

And slow idling to warm 'er up is slow death for your engine.

If your operation calls for warming up your tracked or wheeled vehicle every once in a while, you should use a starting aid to save your batteries and starter from all that work. SB 9-16 (Feb 65) allows your outfit to get the M40 slave kit if you're where the temperature doesn't get much over 0° F.

If the SB says you rate the slave kit, then you also get engine primer and slave receptacle kits for your vehicles.



But if you don't meet the requirements for the slave-starting setup, your CO can give the OK for getting jump cables. Then you can use one vehicle to start all the others. You just go right down the line, hook up to one vehicle, get 'er started, unhook and move on to the next.

Your self-service store may carry jumper cables or will stock 'em if there's enough demand. Or you can buy 'em on the local market.

Jump starting's a snap, as long as you remember: Positive to positive, negative to negative. All Army combat and tactical vehicles have a negative ground. So, even if you can't find a plus (+) or a minus (−) on your batteries, you know

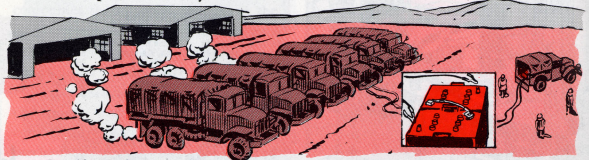
Babying your combat or tactical vehicle can do its engine more harm than good.

You're not doing your vehicle any favors by working the batteries and starter several times a night for a short engine warm-up.

And slow idling to warm 'er up is slow death for your engine.

If your operation calls for warming up your tracked or wheeled vehicle every once in a while, you should use a starting aid to save your batteries and starter from all that work. SB 9-16 (Feb 65) allows your outfit to get the M40 slave kit if you're where the temperature doesn't get much over 0°F.

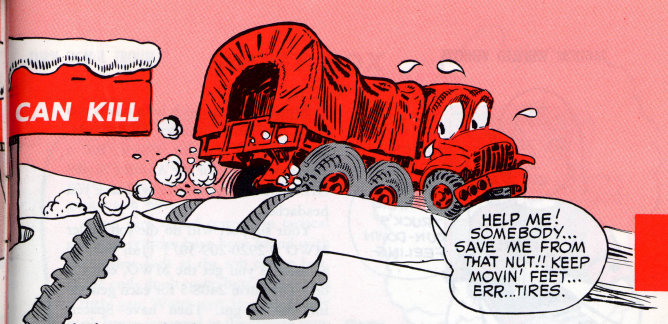
If the SB says you rate the slave kit, then you also get engine primer and slave receptacle kits for your vehicles.



But if you don't meet the requirements for the slave-starting setup, your CO can give the OK for getting jump cables. Then you can use one vehicle to start all the others. You just go right down the line, hook up to one vehicle, get 'er started, unhook and move on to the next.

Your self-service store may carry jumper cables or will stock 'em if there's enough demand. Or you can buy 'em on the local market.

Jump starting's a snap, as long as you remember: Positive to positive, negative to negative. All Army combat and tactical vehicles have a negative ground. So, even if you can't find a plus (+) or a minus (−) on your batteries, you know



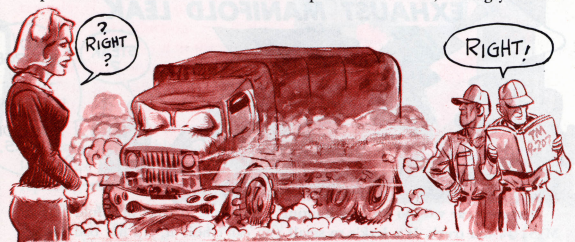
the battery cable fastened to the chassis or engine block is negative and the cable going to the starter is positive.

FAST IDLE OR NO IDLE

If you have to idle your engine to warm it up or because you've got some reason to keep it running, make it a fast idle—usually at least 1,000 RPM's.

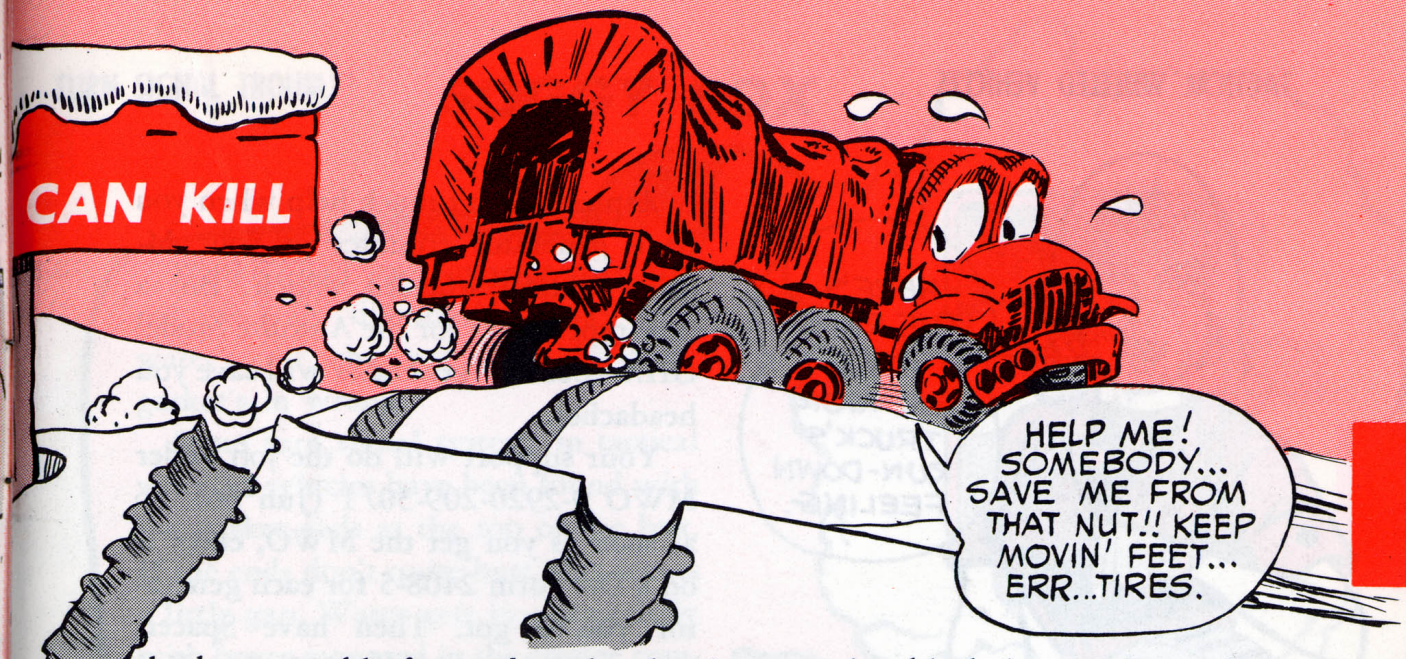
Idling, especially low idling (about 600 RPM), is slow death to engines. Some guys find it hard to believe, but it's a fact that slow idling cuts down on engine life and wears out batteries. Idling a compression ignition engine too low can bring on shivers and shakes that'll bust or loosen up parts.

Your engine won't heat up fast enough at low idle. No-load operating temperatures cause condensation to build up in the crankcase, fouling your oil.



And if these aren't enough good reasons against low idling warm-up, glue your baby blues to a long list of convincers in TM 9-207 (Sep 59), Sect III, para 24c—Idling Limitations

So, be kind to your engine—but not killing kind.



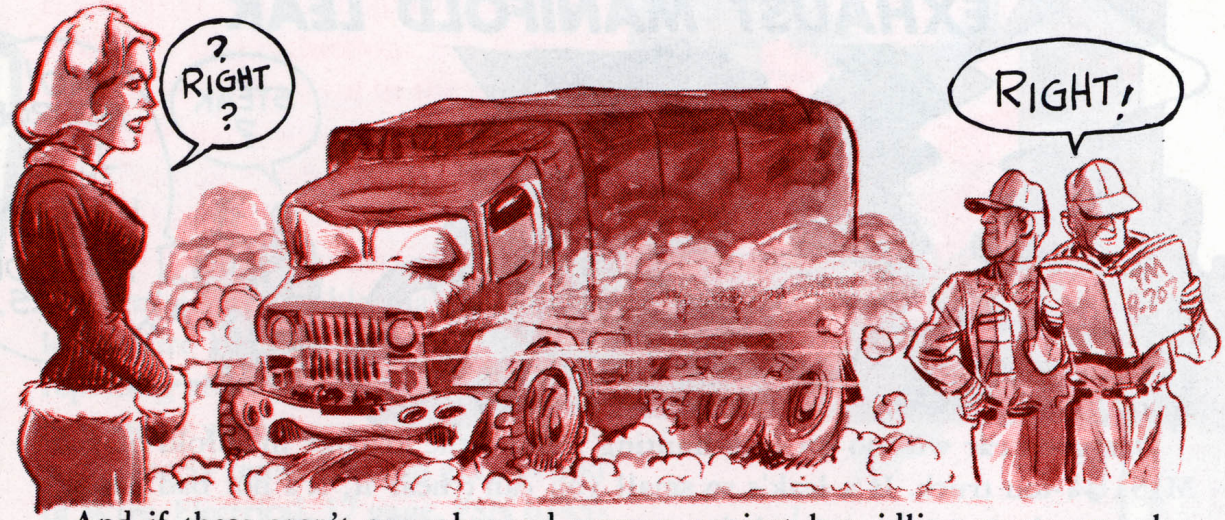
the battery cable fastened to the chassis or engine block is negative and the cable going to the starter is positive.

FAST IDLE OR NO IDLE

If you have to idle your engine to warm it up or because you've got some reason to keep it running, make it a fast idle—usually at least 1,000 RPM's.

Idling, especially low idling (about 600 RPM), is slow death to engines. Some guys find it hard to believe, but it's a fact that slow idling cuts down on engine life and wears out batteries. Idling a compression ignition engine too low can bring on shivers and shakes that'll bust or loosen up parts.

Your engine won't heat up fast enough at low idle. No-load operating temperatures cause condensation to build up in the crankcase, fouling your oil.

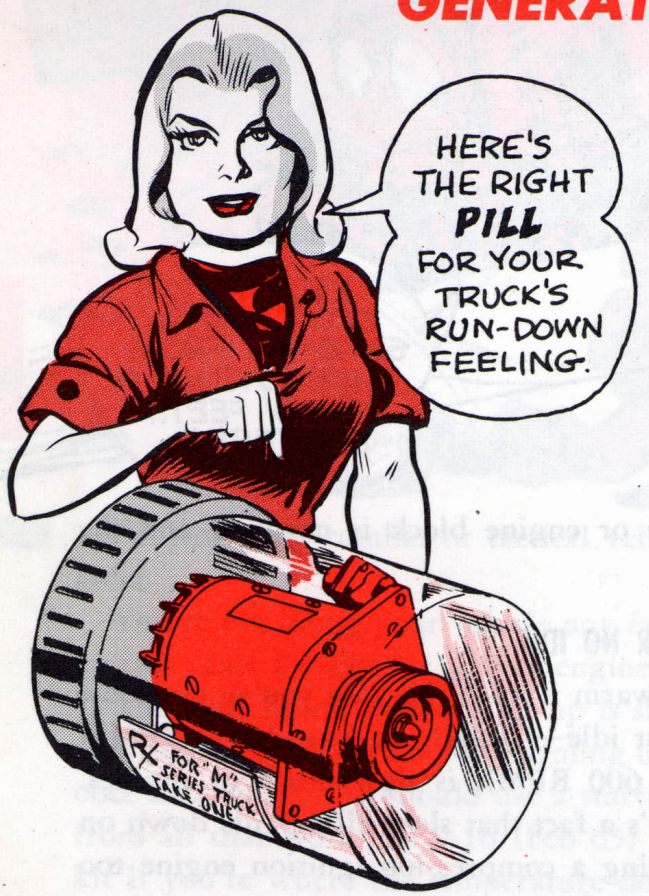


And if these aren't enough good reasons against low idling warm-up, glue your baby blues to a long list of convincers in TM 9-207 (Sep 59), Sect III, para 24c—Idling Limitations

So, be kind to your engine—but not killing kind.

TACTICAL WHEELED VEHICLES . . .

GENERATOR MWO



Aspirins aren't much help when you have generator troubles in your M-series tactical wheeled vehicle. But a new-type spacer for the Autolite Model GHA-4802 UT generator will save you headaches.

Your support will do the job under MWO 9-2920-209-30/1 (Jun 66). So as soon as you get the MWO, enter it on a DA Form 2408-5 for each generator you've got. Then have Spacer, sleeve, FSN 2815-900-7905, installed on the drive pulley end of the shaft.

Like the MWO says, this new spacer has more contact area and'll stretch the life of your generator's armature shaft and drive pulley hub.

If you get a replacement generator of this model, make sure you get a 2408-5 with it so you'll know how it stands on the MWO.

M151 ¼-TON TRUCK . . .

EXHAUST MANIFOLD LEAK

One good ear will do for leak-hunting around the exhaust manifold of your M151 ¼-ton truck. If a leak's so small you can't hear it, it's not bad enough to worry about.

If either the exhaust or intake manifolds have to come off for inspection for leaks, you should be up on the check points on pages 117-118 in TM 9-2805-213-34 (Jan 63), the TM for the M151's engine.

TURN SIGNAL TROUBLE?

SOGGY BOX

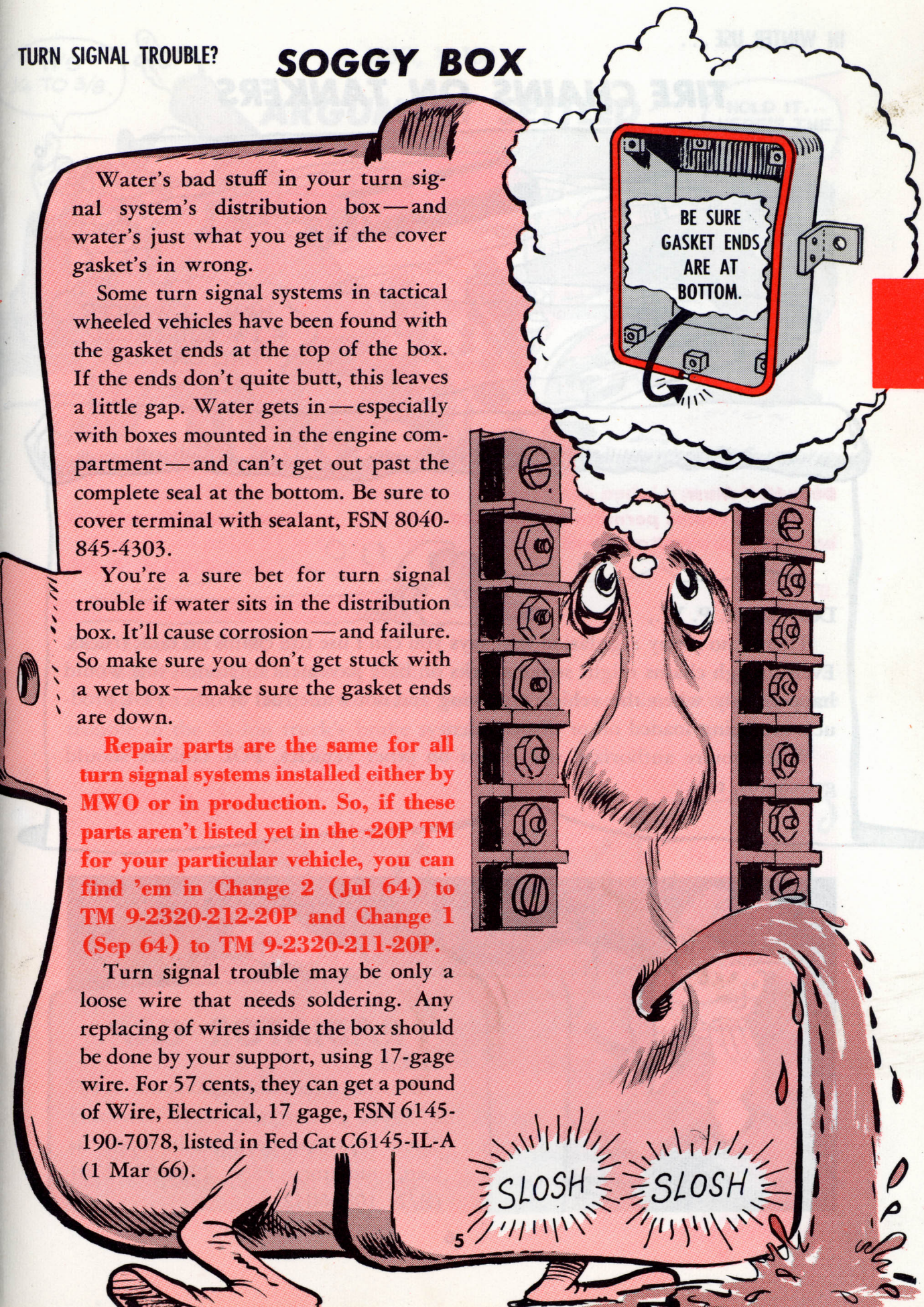
Water's bad stuff in your turn signal system's distribution box—and water's just what you get if the cover gasket's in wrong.

Some turn signal systems in tactical wheeled vehicles have been found with the gasket ends at the top of the box. If the ends don't quite butt, this leaves a little gap. Water gets in—especially with boxes mounted in the engine compartment—and can't get out past the complete seal at the bottom. Be sure to cover terminal with sealant, FSN 8040-845-4303.

You're a sure bet for turn signal trouble if water sits in the distribution box. It'll cause corrosion—and failure. So make sure you don't get stuck with a wet box—make sure the gasket ends are down.

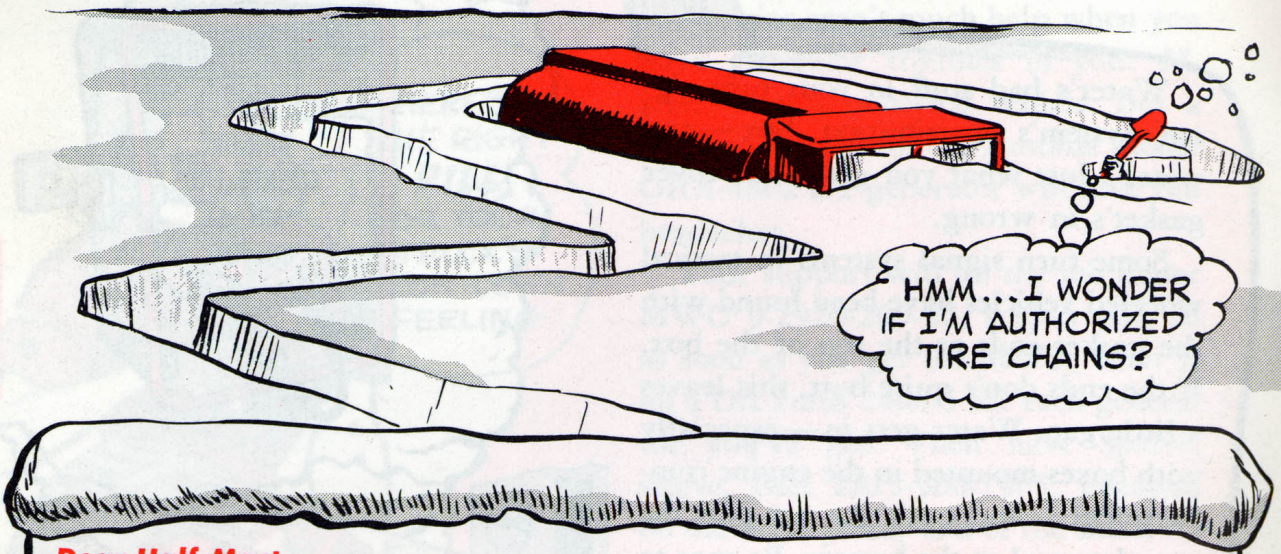
Repair parts are the same for all turn signal systems installed either by MWO or in production. So, if these parts aren't listed yet in the -20P TM for your particular vehicle, you can find 'em in Change 2 (Jul 64) to TM 9-2320-212-20P and Change 1 (Sep 64) to TM 9-2320-211-20P.

Turn signal trouble may be only a loose wire that needs soldering. Any replacing of wires inside the box should be done by your support, using 17-gage wire. For 57 cents, they can get a pound of Wire, Electrical, 17 gage, FSN 6145-190-7078, listed in Fed Cat C6145-IL-A (1 Mar 66).



IN WINTER USE . . .

TIRE CHAINS ON TANKERS



Dear Half-Mast,

Are tire chains permitted to be used with the gas tanker M49C-series or other POL product carriers?

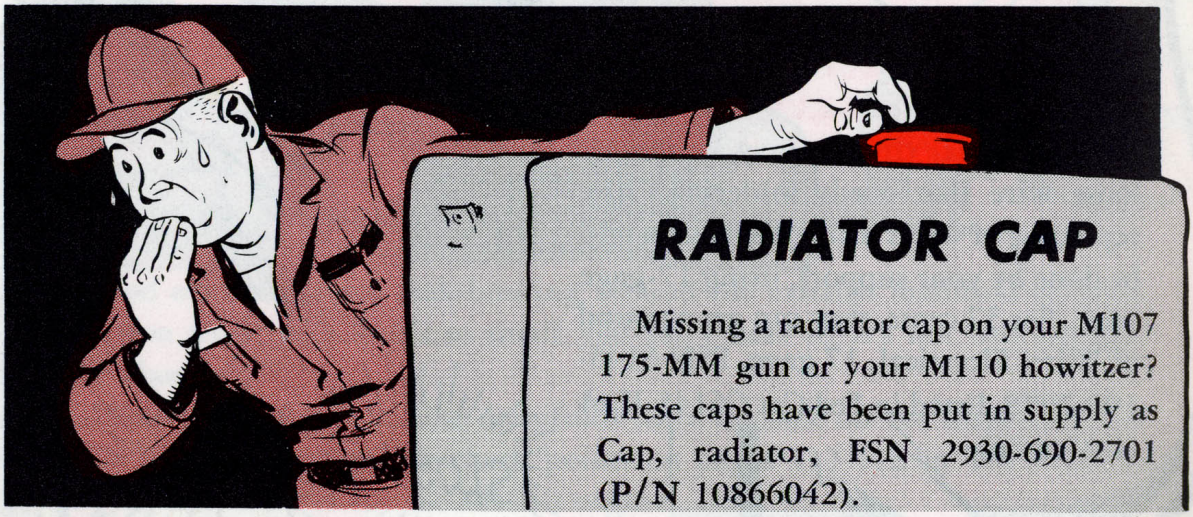
CWO E. P. W.

Dear Mr. E. P. W.,

There's no Army regulation that says you can't use tire chains on tank trucks. Even though chains might strike sparks on bare pavement or stones, this would happen only when the vehicle's moving and not while fuel or other POL products are being loaded on or dispensed.

When you're authorized tire chains on other vehicles, POL tankers should get chains, too.

Half-Mast

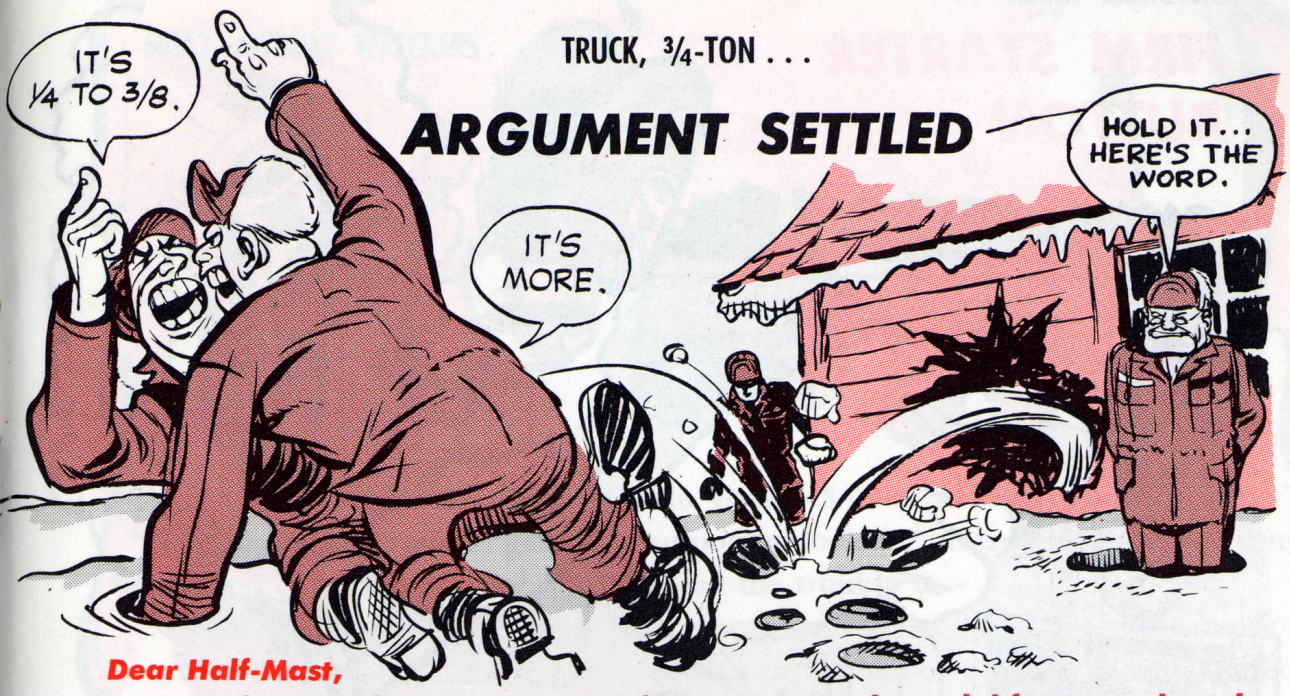


RADIATOR CAP

Missing a radiator cap on your M107 175-MM gun or your M110 howitzer? These caps have been put in supply as Cap, radiator, FSN 2930-690-2701 (P/N 10866042).

TRUCK, ¾-TON . . .

ARGUMENT SETTLED



Dear Half-Mast,

How about settling an argument here on the brake pedal free travel on the G741-series ¾-ton truck.

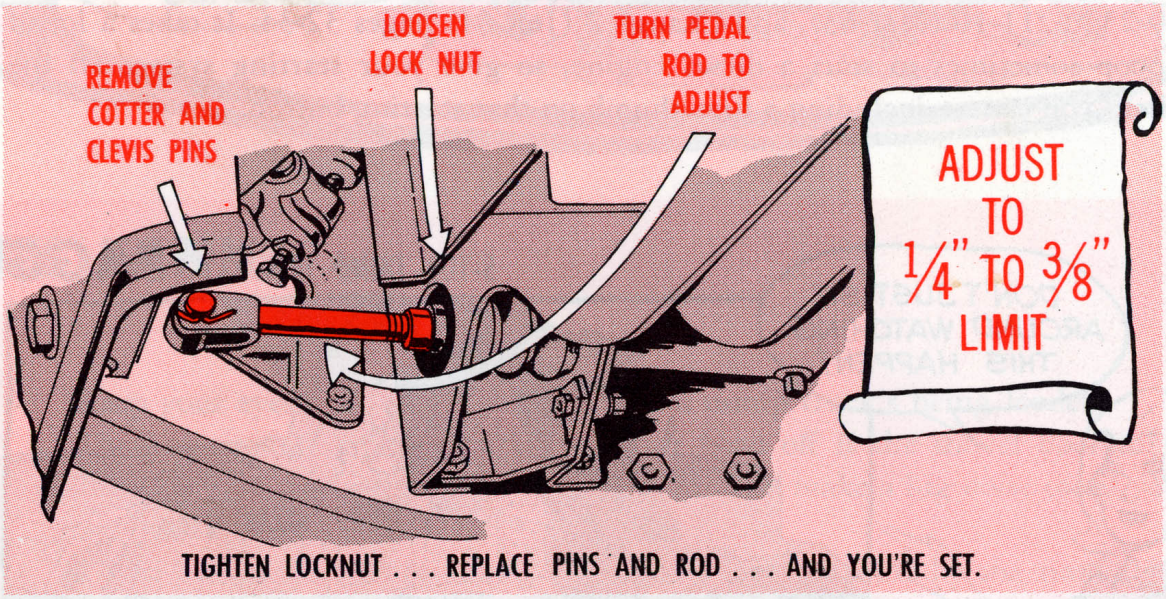
Item 12 on page 21 in Ch 8 to TM 9-8030 says the free travel is supposed to be ¼ to ⅜ inch. Is that right?

SP5 D. R. D.

Dear Specialist D. R. D.,

Whoever says that's right is right.

The free travel used to be more, but it turned out this was causing some trouble in the ¾-ton truck's brake system.



Para 217 in the basic TM tells how to adjust the brake pedal, but it gives the old free-travel limit. You still adjust it the same way but with the ¼ to ⅜-in limit.

Half-Mast

5-TON DIESEL TRUCK . . .

FIRM STARTER BUTTON

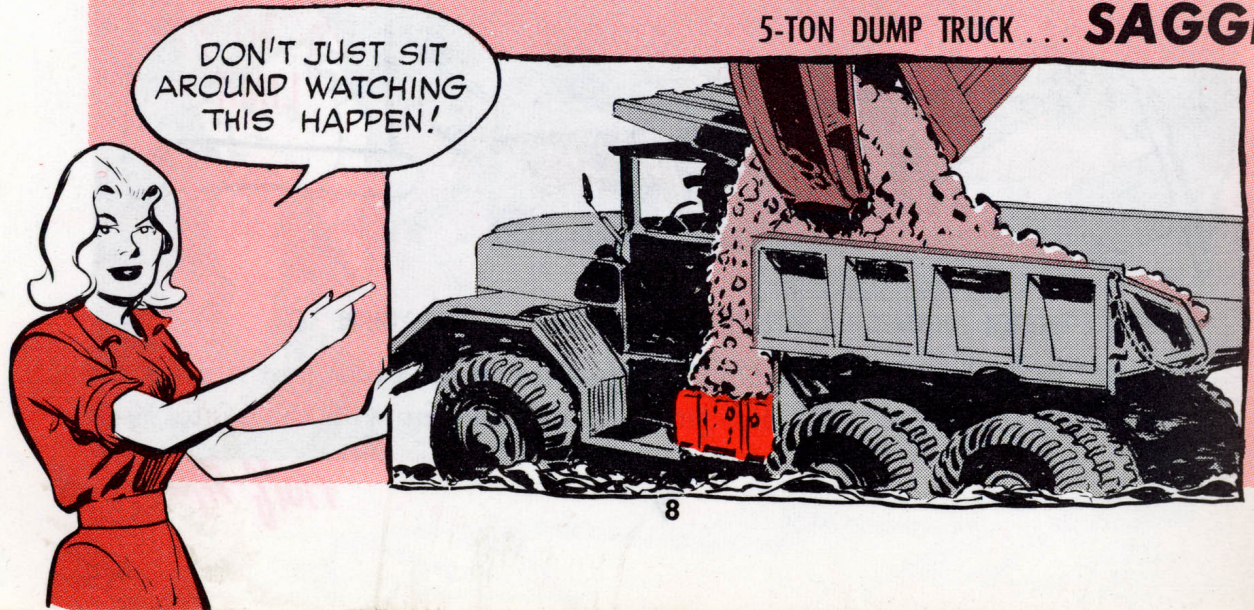
Just make believe you're mashing your gal's doorbell when you press the starter button in your 5-ton G744-series diesel or multifuel truck.

Hit it quick and then hold it firm while the starter's turnin' over.

Save your delicate touch for the chopsticks—your starter switch doesn't need it or want it. A light thumb or finger causes the contacts to spark, burn and fuse together.

Pause right now and refresh your memory on the starting procedure in TM 9-2320-211-10 (Mar 63), and Change 2 (Jun 64) pages 32-34. It takes a lot of poop sometimes to start a diesel engine, so give your starting system all the help you can — including a firm thumb on that starting button.

5-TON DUMP TRUCK . . . **SAGGIN'**



5-TON DIESEL TRUCK . . .

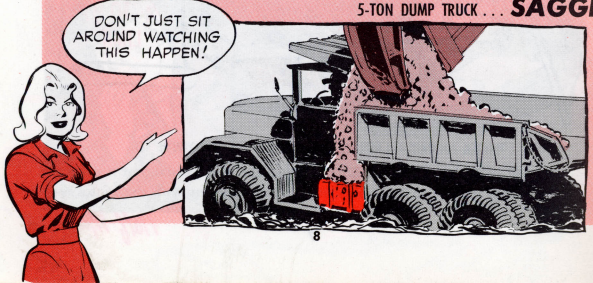
FIRM STARTER BUTTON

Just make believe you're mashing your gal's doorbell when you press the starter button in your 5-ton G744-series diesel or multifuel truck.

Hit it quick and then hold it firm while the starter's turnin' over.

Save your delicate touch for the chopsticks—your starter switch doesn't need it or want it. A light thumb or finger causes the contacts to spark, burn and fuse together.

Pause right now and refresh your memory on the starting procedure in TM 9-2320-211-10 (Mar 63), and Change 2 (Jun 64) pages 32-34. It takes a lot of poop sometimes to start a diesel engine, so give your starting system all the help you can — including a firm thumb on that starting button.



5-TON DUMP TRUCK . . . **SAGGIN'**

FUEL TANKS

Keep your eyes open next time your 5-ton dump truck's being loaded.

Then open your mouth and holler your head off if the shovel operator is spilling part of the load onto your fuel tanks. And make a big noise too if your truck's getting overloaded.

Those fuel tanks will be saggin' like a swaybacked mule by the time a few big rocks or chunks of dirt have been dropped on 'em. The tanks and supports can carry 55 gallons of fuel each with no sweat. But they were never meant to take a beating from material spilled during loading or dropping off an overload.

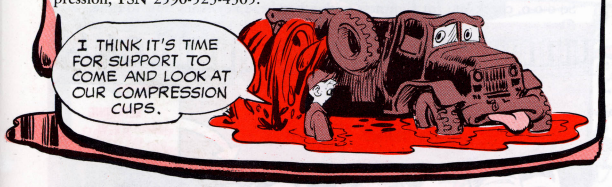
M543, M543A2 WRECKERS . . .

BUM BOOM CUPS?

If you see signs of leaking seals in your M543 or M543A1 5-ton wrecker's boom hydraulic system, get your support to look for undersize or cracked compression cups. Chances are that's where the trouble is.

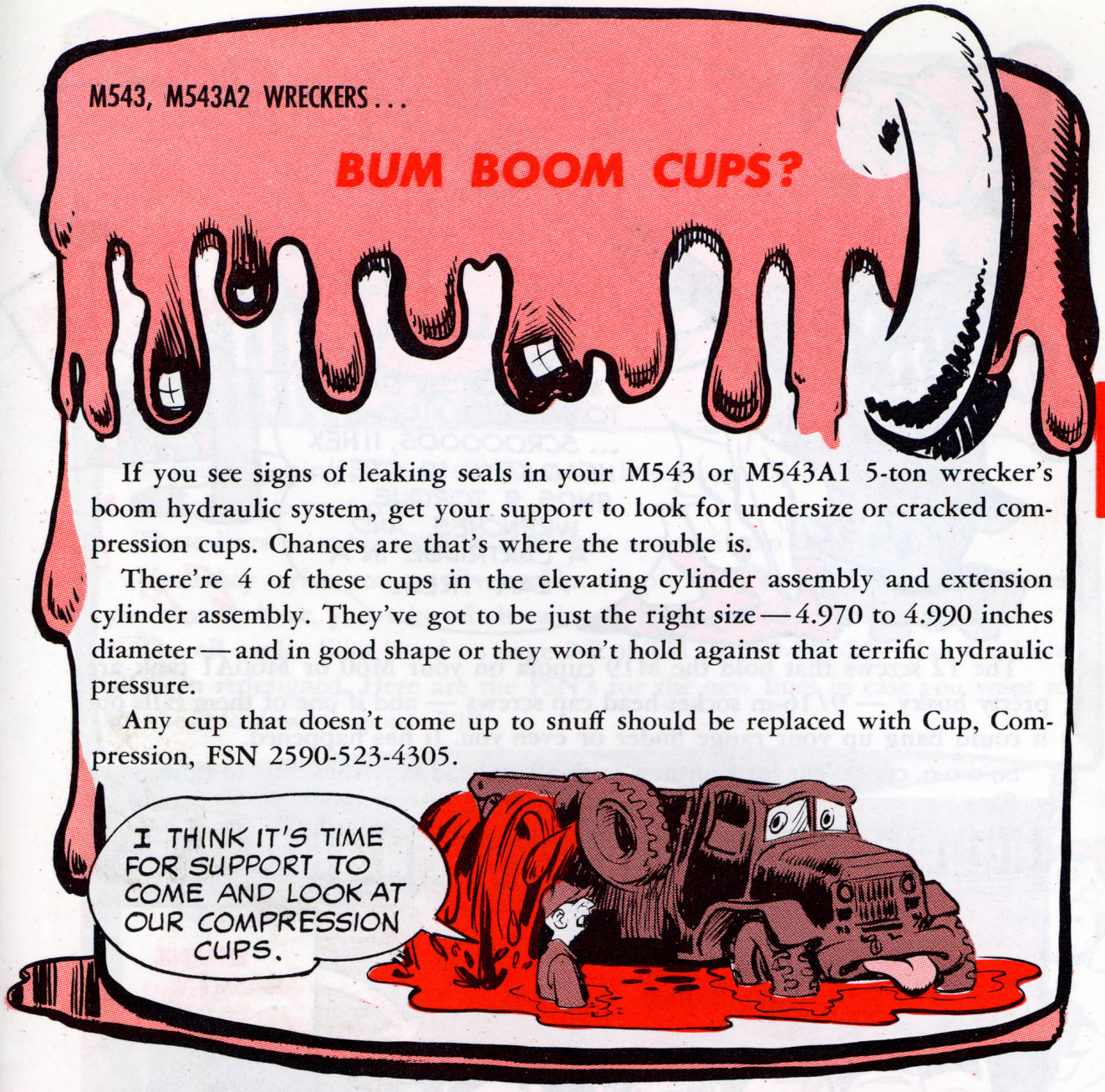
There're 4 of these cups in the elevating cylinder assembly and extension cylinder assembly. They've got to be just the right size—4.970 to 4.990 inches diameter—and in good shape or they won't hold against that terrific hydraulic pressure.

Any cup that doesn't come up to snuff should be replaced with Cup, Compression, FSN 2590-523-4305.



M543, M543A2 WRECKERS . . .

BUM BOOM CUPS?



If you see signs of leaking seals in your M543 or M543A1 5-ton wrecker's boom hydraulic system, get your support to look for undersize or cracked compression cups. Chances are that's where the trouble is.

There're 4 of these cups in the elevating cylinder assembly and extension cylinder assembly. They've got to be just the right size—4.970 to 4.990 inches diameter—and in good shape or they won't hold against that terrific hydraulic pressure.

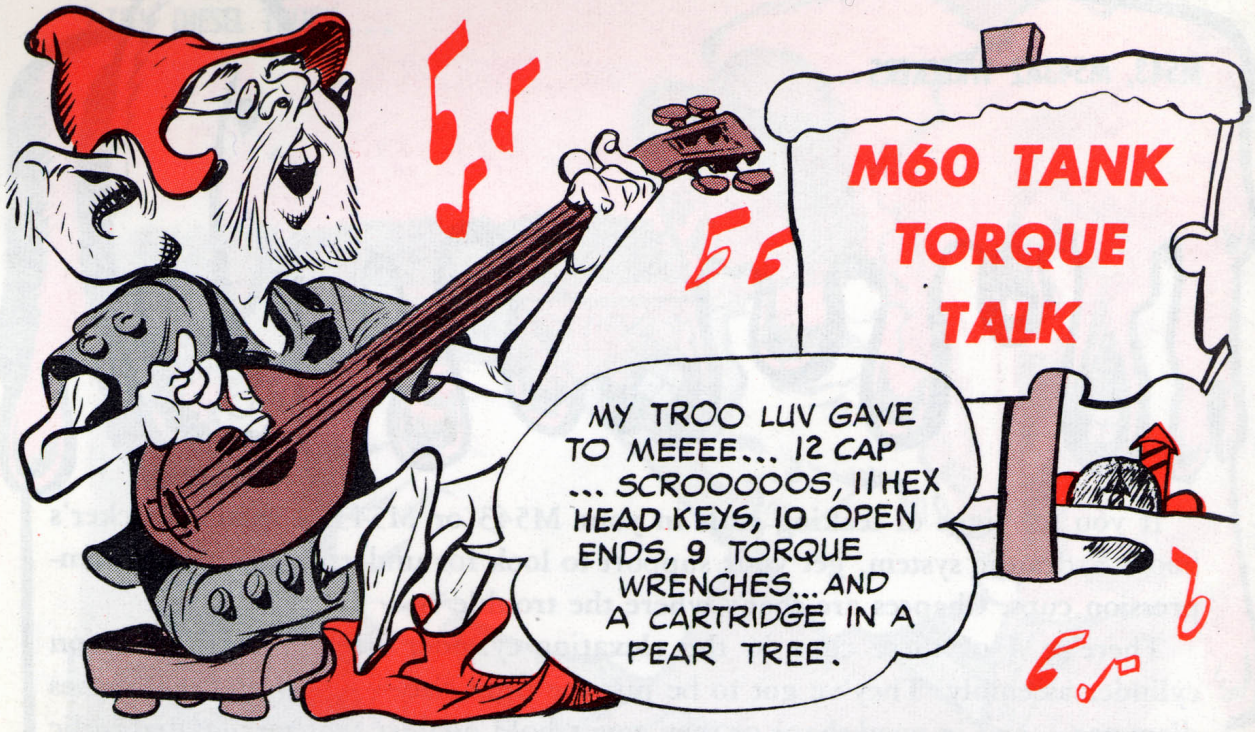
Any cup that doesn't come up to snuff should be replaced with Cup, Compression, FSN 2590-523-4305.

FUEL TANKS

Keep your eyes open next time your 5-ton dump truck's being loaded.

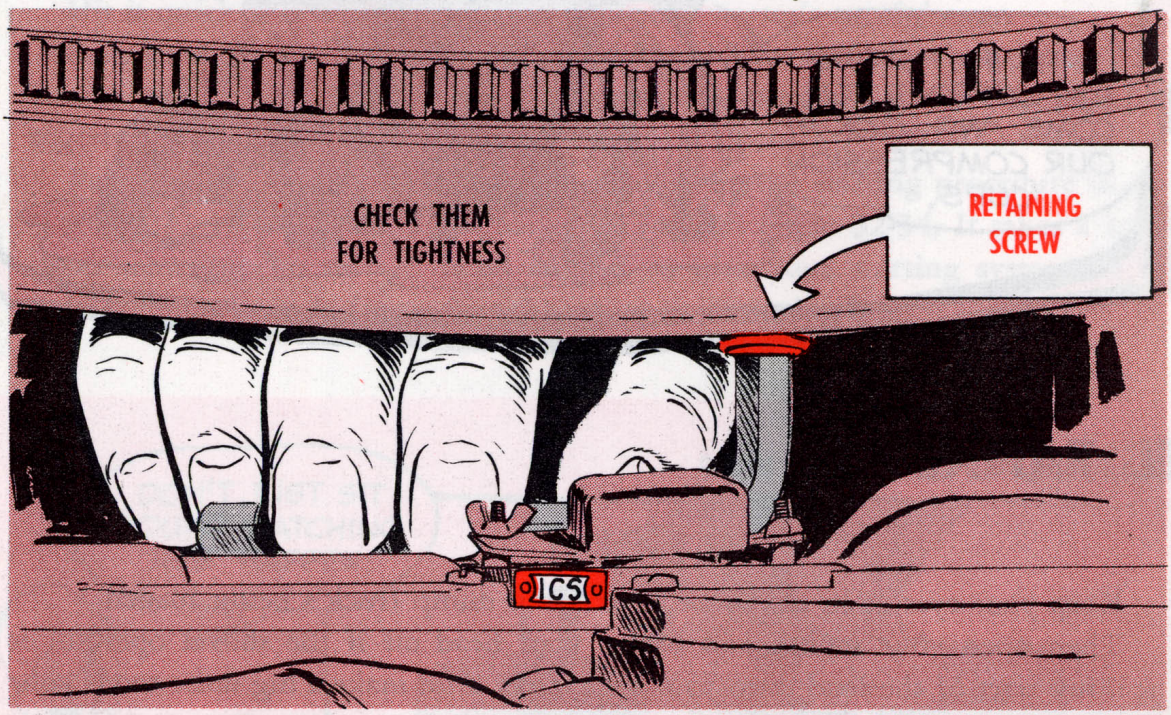
Then open your mouth and holler your head off if the shovel operator is spilling part of the load onto your fuel tanks. And make a big noise too if your truck's getting overloaded.

Those fuel tanks will be saggin' like a swaybacked mule by the time a few big rocks or chunks of dirt have been dropped on 'em. The tanks and supports can carry 55 gallons of fuel each with no sweat. But they were never meant to take a beating from material spilled during loading or dropping off an overload.



The 12 screws that hold the M19 cupola on your M60 or M60A1 tank are pretty husky — 9/16-in socket-head cap screws — and if one of them falls out it could bang up your range finder or even you. It has happened.

So-o-o-o, check 'em for tightness with a hex head key from time to time.



The screw just to the right of the ICS sign on the range finder is a little hard to get to but if you lower your main gun you can tighten it with no sweat.

Every 3 months as part of the Q service your company mechanic will use his torque wrench to tighten all 12 of 'em to 270 to 300 lb-ft. He'll have to settle for regular tightening on the one by the ICS sign since a torque wrench won't fit.

SEASONS GREETINGS FOR M60 SERIES TANKS

NEED OIL COOLER LINES?

So you're getting holes in the oil cooler lines in your M60-series tanks?

So don't lose your cool!

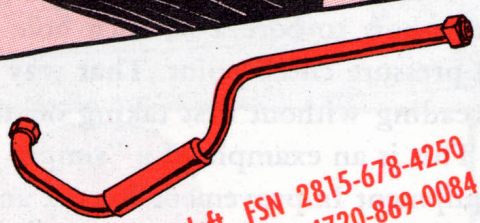
These lines have been out of stock but now you can order 'em.

Until they arrive, you can silver solder the pin holes in the bellows of the lines you already have. Just take off the wire webbing and silver solder the holes.

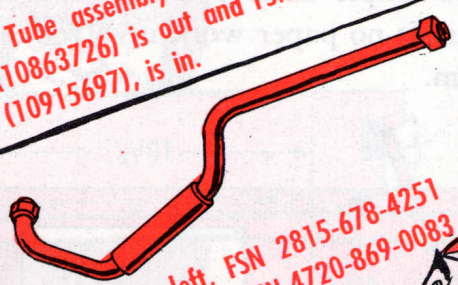
The oil cooler lines listed on page 2-8 of TM 9-2350-215-20P (Jan 65) have all been redesigned. Here are the FSN's for the new lines in case you want to jot the info down in your -20P . . .

Tube assembly right, FSN 2815-678-4248 (10863724) replaced by FSN 4720-869-0086 (10915703).

Tube assembly right, FSN 2815-678-4249 (10863725) replaced by FSN 4720-869-0085 (10915700).



Tube assembly left, FSN 2815-678-4250 (10863726) is out and FSN 4720-869-0084 (10915697), is in.



Tube assembly left, FSN 2815-678-4251 (10863727) replaced by FSN 4720-869-0083 (10915694).

M60A1 TANK SIMPLE FIX

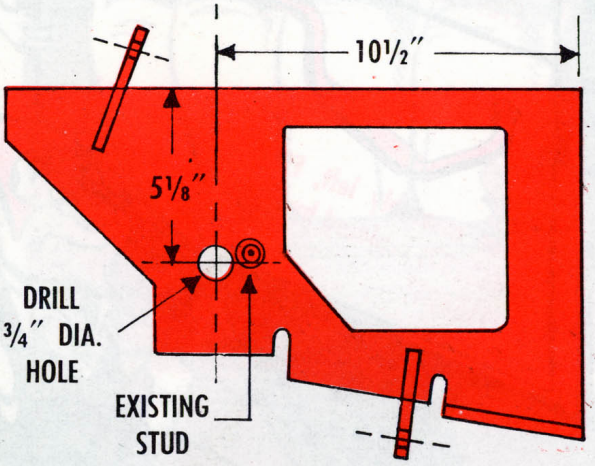
If you've got an M60A1 tank, an M728 combat engineer vehicle or a bridge launcher on an M60A1 tank chassis here's a simple little fix that'll save hours of monkeying around . . .

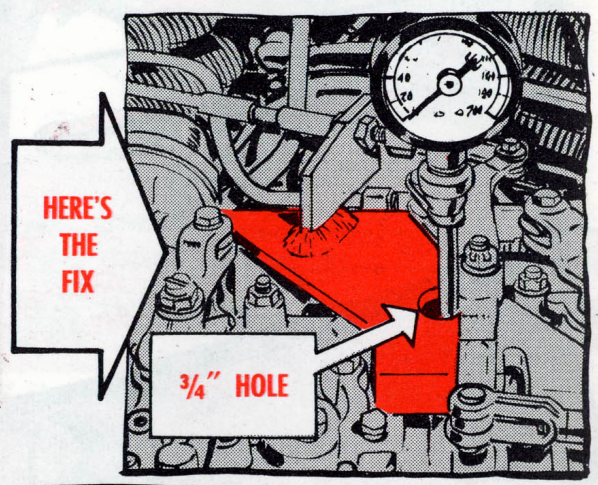
As 'tis now, every time the transmission main oil pressure gets checked, you have to take off the parking brake lever support bracket.

No more. Get your friendly company mechanic to use his tools and scientific know-how to bore a ¾-inch hole through the bracket directly above the main oil pressure check point. That way the oil pressure gage can be put on to give a reading without first taking off the brake lever support bracket.

This is an example of a "simple fix" which means that it is authorized in the Equipment Improvement Report and Maintenance Digest, TB 750-933-1.

A simple fix is optional. The user can apply it or not as he chooses. Also, there is no paper work involved, and if the fix is applied it is not noted on any form.





M60A1 TANK SIMPLE FIX

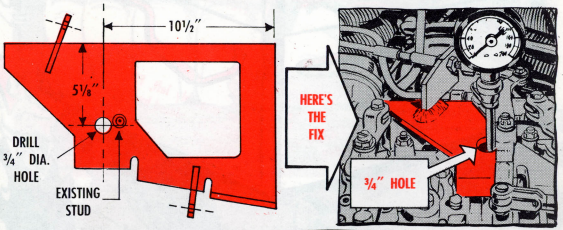
If you've got an M60A1 tank, an M728 combat engineer vehicle or a bridge launcher on an M60A1 tank chassis here's a simple little fix that'll save hours of monkeying around . . .

As 'tis now, every time the transmission main oil pressure gets checked, you have to take off the parking brake lever support bracket.

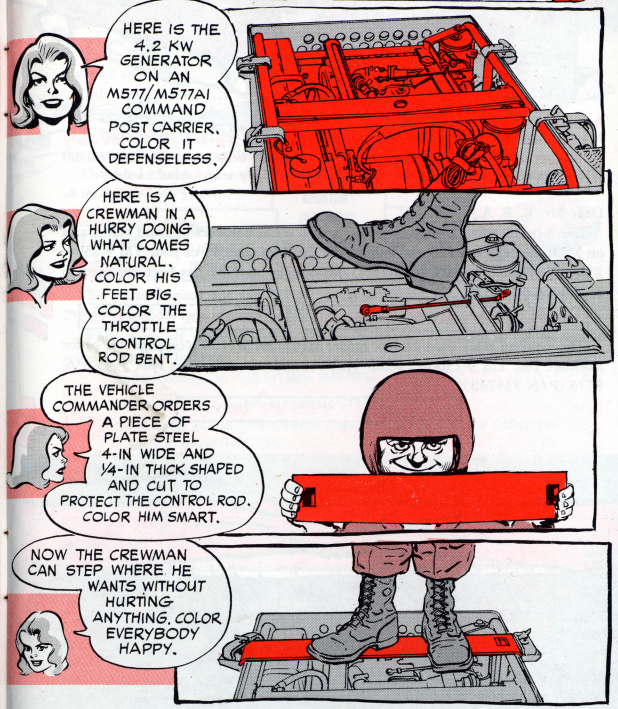
No more. Get your friendly company mechanic to use his tools and scientific know-how to bore a ¾-inch hole through the bracket directly above the main oil pressure check point. That way the oil pressure gage can be put on to give a reading without first taking off the brake lever support bracket.

This is an example of a "simple fix" which means that it is authorized in the Equipment Improvement Report and Maintenance Digest, TB 750-933-1.

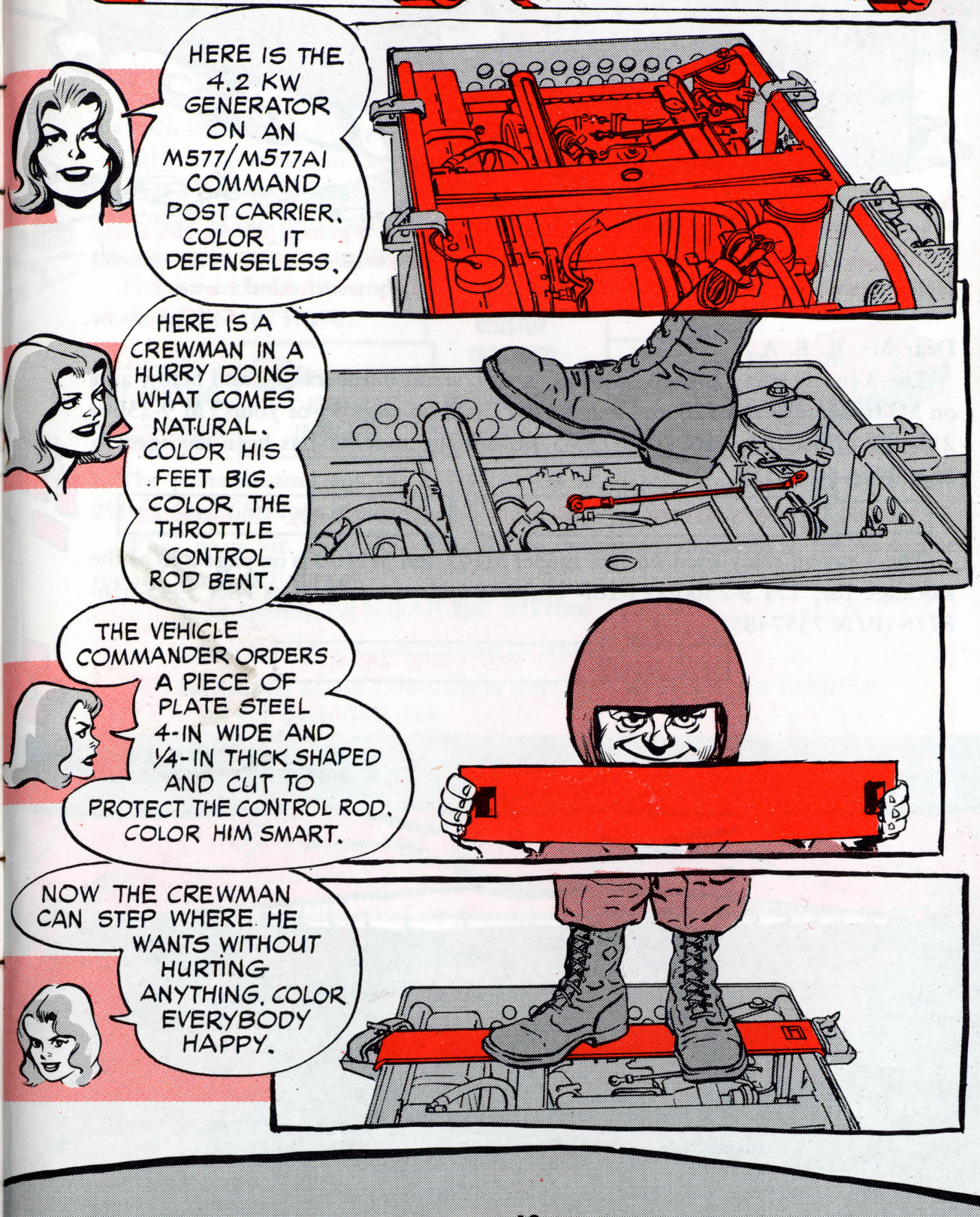
A simple fix is optional. The user can apply it or not as he chooses. Also, there is no paper work involved, and if the fix is applied it is not noted on any form.

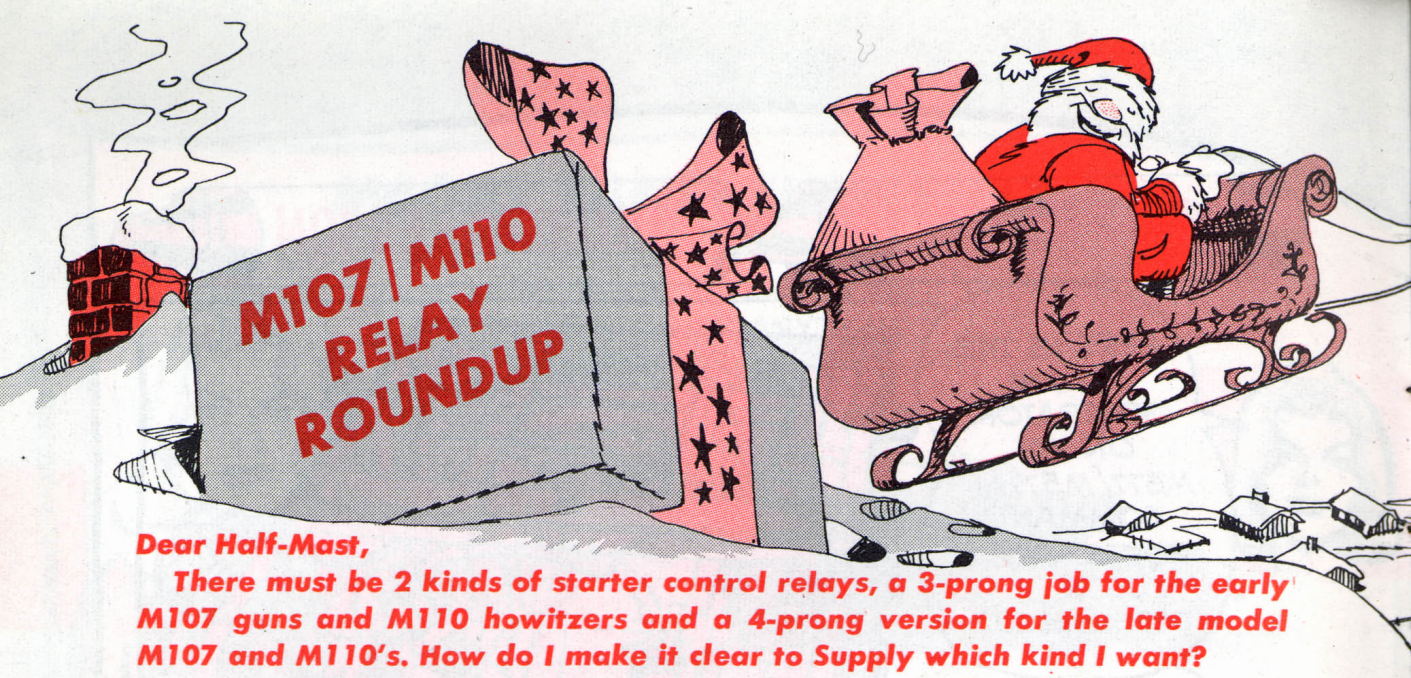


M577/M577A1 COLORING LESSON



M577/M577A1 COLORING LESSON





Dear Half-Mast,

There must be 2 kinds of starter control relays, a 3-prong job for the early M107 guns and M110 howitzers and a 4-prong version for the late model M107 and M110's. How do I make it clear to Supply which kind I want?

CWO R. E. A.

Dear Mr. R. E. A.,

The 3-prong relay is used on M107's with serial numbers 115 and below and on M110's numbered 120 and below. It's listed on page 35 of your TM 9-2300-216-20P (Jul 62) as FSN 1015-735-5708 but the number has been changed to FSN 5945-503-6519.

3 PRONG → M107'S SER. NOS. 115 AND BELOW | M110'S SER. NOS. 120 AND BELOW

The 4-prong relay used on late model M107 and M110's is on page 220 of the stockage list, TM 9-2300-223-20P (Jul 65) and you order it as FSN 5945-636-8778 (P/N 7357485).

4 PRONG → LATER MODELS M107 AND M110

Half-Mast

TANK CLOSED

When you were home—can you remember that far back?—you closed the doors to keep out the bugs and the beatniks.

But do you have to keep the doors closed in your M60, M60A1 or M48A3 tank?

Darn right you do!

The doors on your M24 and M32 periscope stowage boxes can swing past the edge of the turret basket if you leave 'em open. When you traverse the turret

Dear Half-Mast,

There must be 2 kinds of starter control relays, a 3-prong job for the early M107 guns and M110 howitzers and a 4-prong version for the late model M107 and M110's. How do I make it clear to Supply which kind I want?

CWO R. E. A.

Dear Mr. R. E. A.,

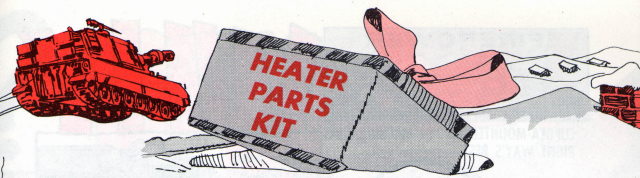
The 3-prong relay is used on M107's with serial numbers 115 and below and on M110's numbered 120 and below. It's listed on page 35 of your TM 9-2300-216-20P (Jul 62) as FSN 1015-735-5708 but the number has been changed to FSN 5945-503-6519.

3 PRONG → M107'S SER. NOS. 115 AND BELOW | M110'S SER. NOS. 120 AND BELOW

The 4-prong relay used on late model M107 and M110's is on page 220 of the stockage list, TM 9-2300-223-20P (Jul 65) and you order it as FSN 5945-636-8778 (P/N 7357485).

4 PRONG → LATER MODELS M107 AND M110

Half-Mast

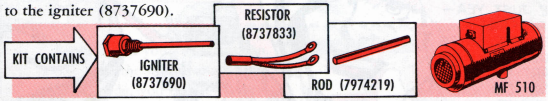


So you've got a Perfection Model MF 510 personnel heater in your vehicle . . . it's even better than your love to keep you warm.

Only thing, sometimes an igniter will burn out. When that happens, of course, you get a cold crew fast.

So here is the heart warming (among other places) news. The parts kit for this heater is now in supply as FSN 2540-055-7573 (P/N 10941396).

This kit includes one rod (7974219), and one resistor (8737833) in addition to the igniter (8737690).



The parts manual for the M108/M109 howitzer family, TM 9-2350-217-25P/1 (Jan 65), lists it on page 177.

When parts kit, FSN 2540-055-7573 is exhausted, the items in the kit can be requisitioned as follows:

Igniter Assembly, FSN 2540-941-8681 (8737690).

Resistor Assembly, FSN 2540-999-8588 (8737833).

Rod Assembly Kit, FSN 2590-925-8050 (10947055), composed of Rod (10947053) and Rod, Quartz (10957054).

TANK CLOSED DOOR POLICY

When you were home—can you remember that far back?—you closed the doors to keep out the bugs and the beatniks.

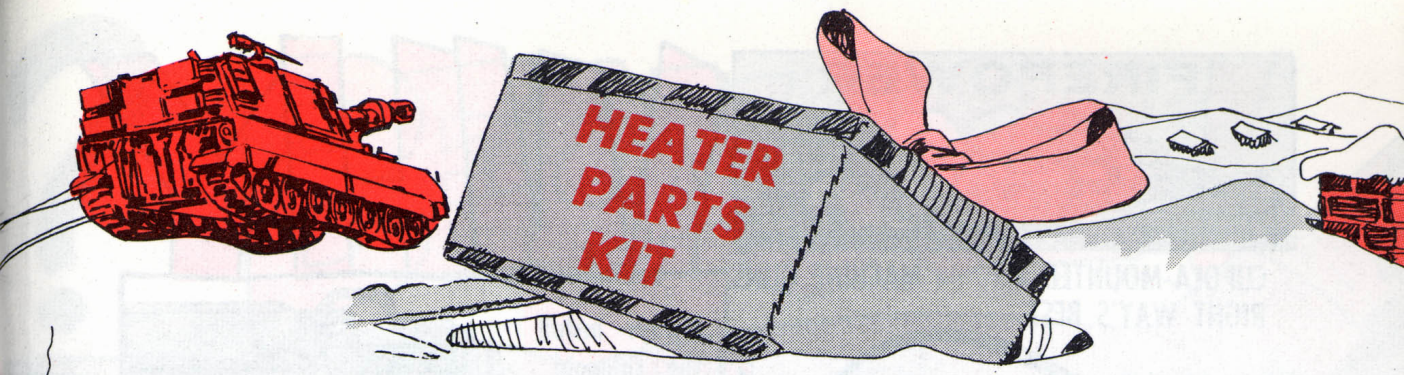
But do you have to keep the doors closed in your M60, M60A1 or M48A3 tank?

Darn right you do!

The doors on your M24 and M32 periscope stowage boxes can swing past the edge of the turret basket if you leave 'em open. When you traverse the turret these swinging doors will snag on ammo stowage rack clamps, among other things, and make a disaster area out of your tank.

So, keep the doors closed and you'll shut out the grief—just like at home.

Like it says on page 2-97 of the -10 TM for the M60/M60A1, check outside the tank for people and obstructions before you traverse. If you make that read "check outside **and inside**" you'll have it knocked.

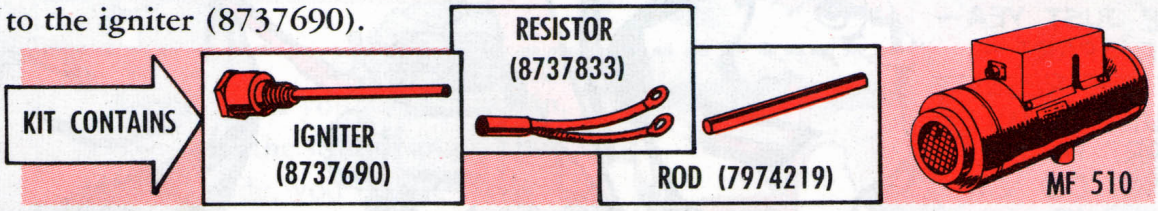


So you've got a Perfection Model MF 510 personnel heater in your vehicle . . . it's even better than your love to keep you warm.

Only thing, sometimes an igniter will burn out. When that happens, of course, you get a cold crew fast.

So here is the heart warming (among other places) news. The parts kit for this heater is now in supply as FSN 2540-055-7573 (P/N 10941396).

This kit includes one rod (7974219), and one resistor (8737833) in addition to the igniter (8737690).



The parts manual for the M108/M109 howitzer family, TM 9-2350-217-25P/1 (Jan 65), lists it on page 177.

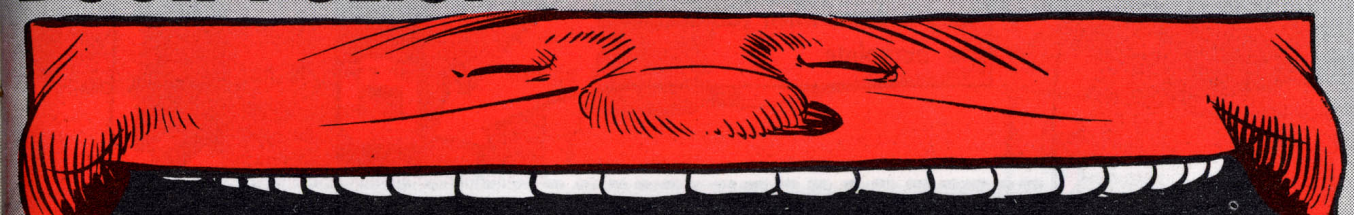
When parts kit, FSN 2540-055-7573 is exhausted, the items in the kit can be requisitioned as follows:

Igniter Assembly, FSN 2540-941-8681 (8737690).

Resistor Assembly, FSN 2540-999-8588 (8737833).

Rod Assembly Kit, FSN 2590-925-8050 (10947055), composed of Rod (10947053) and Rod, Quartz (10957054).

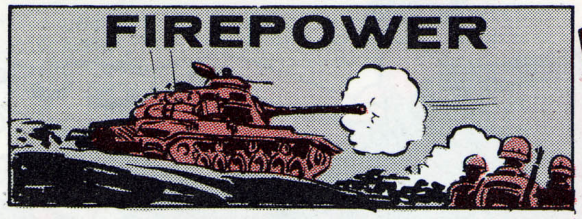
DOOR POLICY



these swinging doors will snag on ammo stowage rack clamps, among other things, and make a disaster area out of your tank.

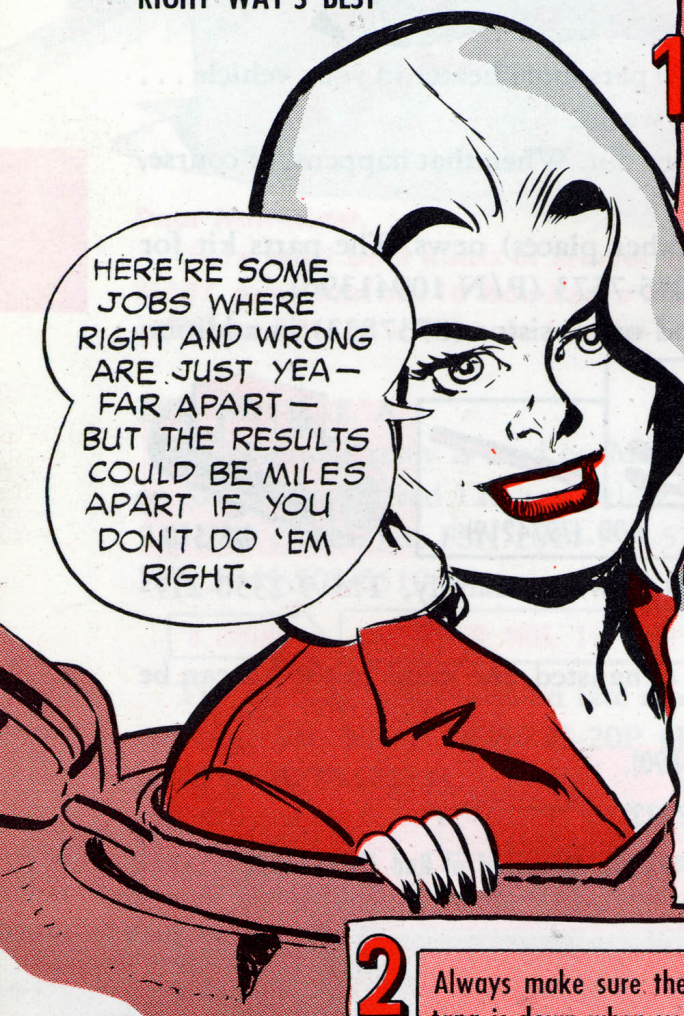
So, keep the doors closed and you'll shut out the grief — just like at home.

Like it says on page 2-97 of the -10 TM for the M60/M60A1, check outside the tank for people and obstructions before you traverse. If you make that read "check outside **and inside**" you'll have it knocked.

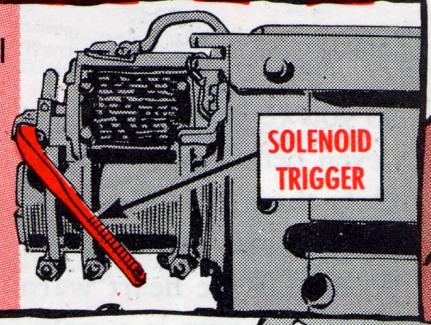


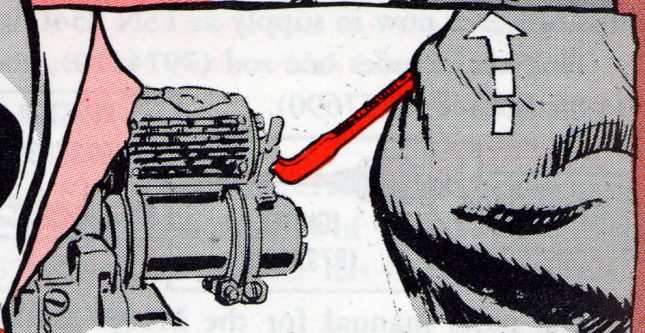
CUPOLA-MOUNTED M2 . . . MACHINE GUNS RIGHT WAY'S BEST

WHY



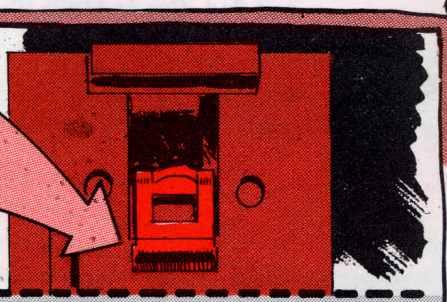
1 Always install the solenoid trigger so it faces to the right and you have to pull it to fire.



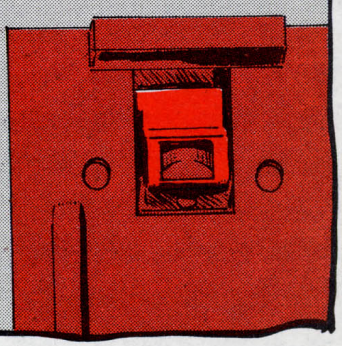


Because—If you put it on backwards so you have to push it to fire, sure 'nuff some Joe's going to fire it accidentally by bumping it . . . or by getting it caught in his field jacket or pistol belt . . . or it might poke you in the eye.

2 Always make sure the trigger tang is down when you install the backplate.



Because—If the backplate goes on with the trigger tang up, you'll have one heckuva time getting it off again. Likely you'll have to call your mechanic since the solenoid will have to be put on right.

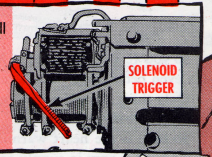


CUPOLA-MOUNTED M2 . . . MACHINE GUNS RIGHT WAY'S BEST

WHY ? BECAUSE !

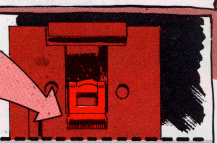
HERE'RE SOME JOBS WHERE RIGHT AND WRONG ARE JUST YEA— FAR APART— BUT THE RESULTS COULD BE MILES APART IF YOU DON'T DO 'EM RIGHT.

1 Always install the solenoid trigger so it faces to the right and you have to pull it to fire.

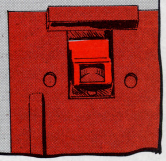


Because — If you put it on backwards so you have to push it to fire, sure 'nuff some Joe's going to fire it accidentally by bumping it . . . or by getting it caught in his field jacket or pistol belt . . . or it might poke you in the eye.

2 Always make sure the trigger tang is down when you install the backplate.

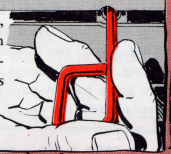


Because — If the backplate goes on with the trigger tang up, you'll have one heckuva time getting it off again. Likely you'll have to call your mechanic since the solenoid will have to be put on right.

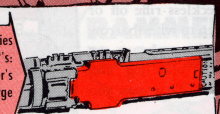


3 Always use a pair of pliers to pull the bolt stud out of the left side of the weapon.

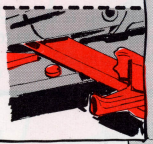
Because — If you use a drift pin, say, to force the stud through from the right side, you'll be sure for certain ruin the sear spring that crosses up and down inside that hole.



4 And here's a tip that applies only to side-mounted M2's: Always make sure the cover's closed every time you charge the weapon.



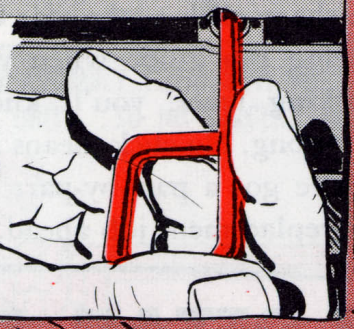
Because — If the cover's open, gravity will pull the extractor down so it will get jammed behind the extractor switch after you pull the charger handle all the way back.



5 ALWAYS TAKE GOOD CARE OF YOUR GUN. BECAUSE . . . WELL, JUST BECAUSE . . .

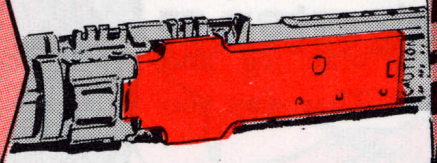
? BECAUSE !

3 Always use a pair of pliers to pull the bolt stud out of the left side of the weapon.

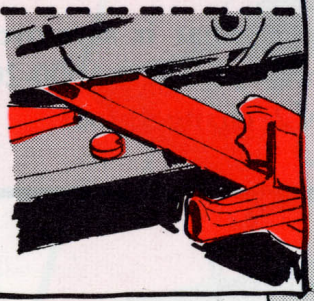


Because — If you use a drift pin, say, to force the stud through from the right side, you'll sure for certain ruin the sear spring that crosses up and down inside that hole.

4 And here's a tip that applies only to side-mounted M2's: Always make sure the cover's closed every time you charge the weapon.



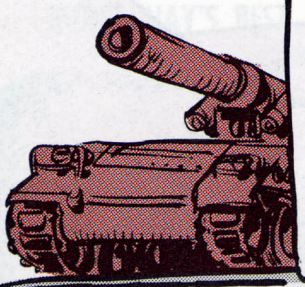
Because — If the cover's open, gravity will pull the extractor down so it will get jammed behind the extractor switch after you pull the charger handle all the way back.

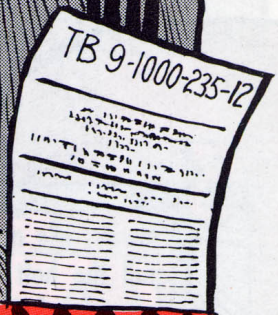


5 ALWAYS TAKE GOOD CARE OF YOUR GUN. BECAUSE . . . WELL, JUST BECAUSE . . .

NO CLICK? IT'S SICK!

Don't be half-safe, be cock-sure you have positive cocking action before firing any tank or SP howitzer or SP gun that has a breech mechanism with a sliding wedge breechblock. Otherwise you might get a premature firing—which could get somebody hurt.

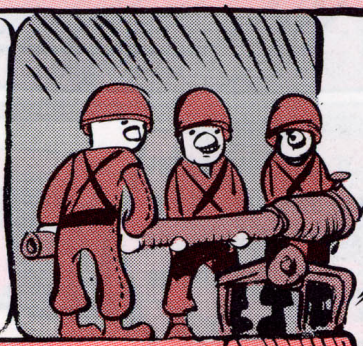




The way to make absolutely sure is to make the 2-man check spelled out in TB 9-1000-235-12 (14 Oct 65). If you don't hear a sharp click as the sear engages the firing pin guide when you pull the cocking lever, you'll know something's wrong. No click means it's sick and you've got a part-by-part inspection and replacement job ahead.

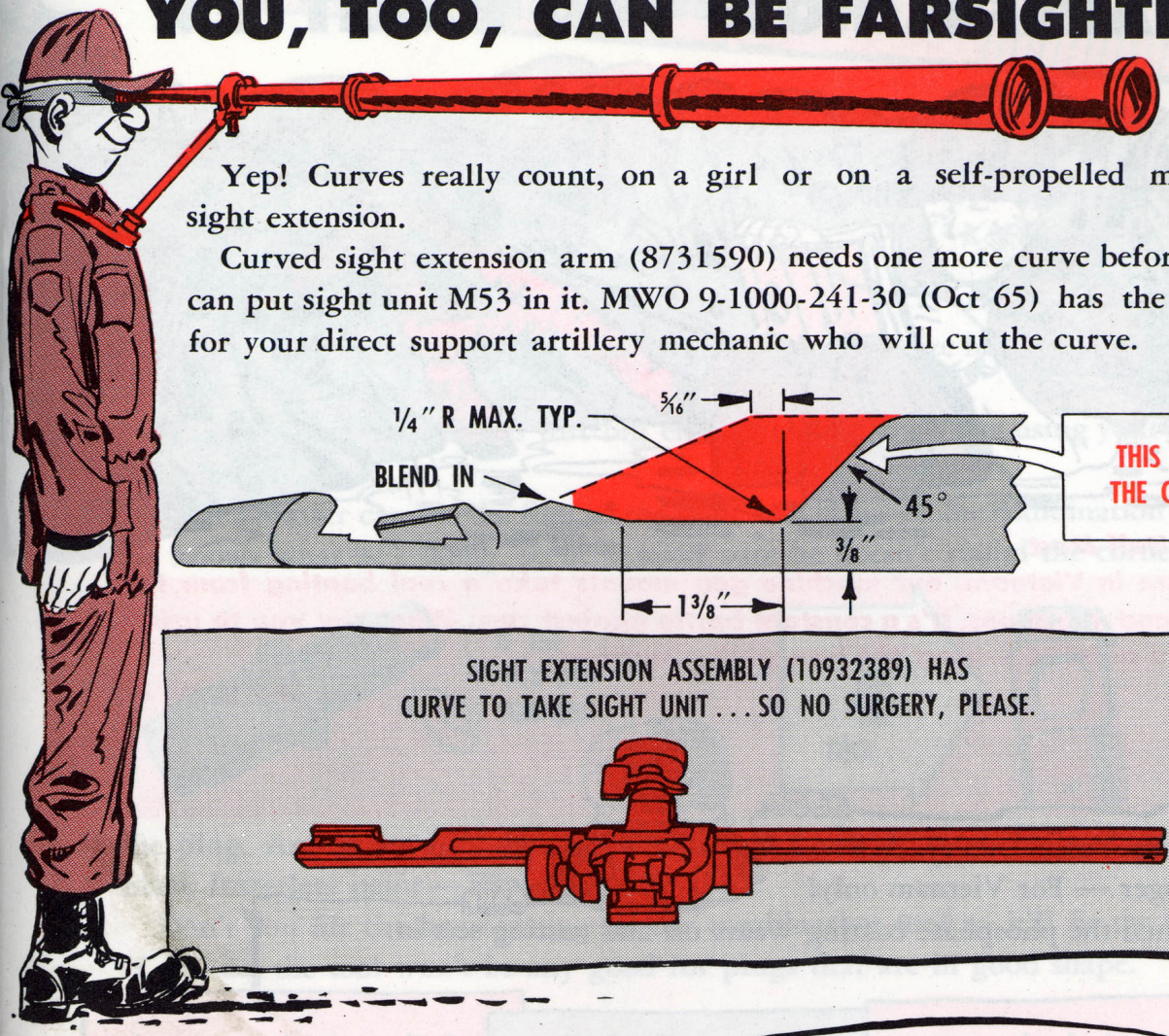
3-MAN DETAIL EVERY TIME

Any time you have to move a mounted 106MM reckless rifle off or on a vehicle — or even to wheelbarrow it over rough ground — always use 3 men. One at each rear leg and one at the muzzle end. That way you won't drop it.



That's what it says over and over in para 34 of TM 9-1000-205-12 (Mar 59) w/2 changes, too!

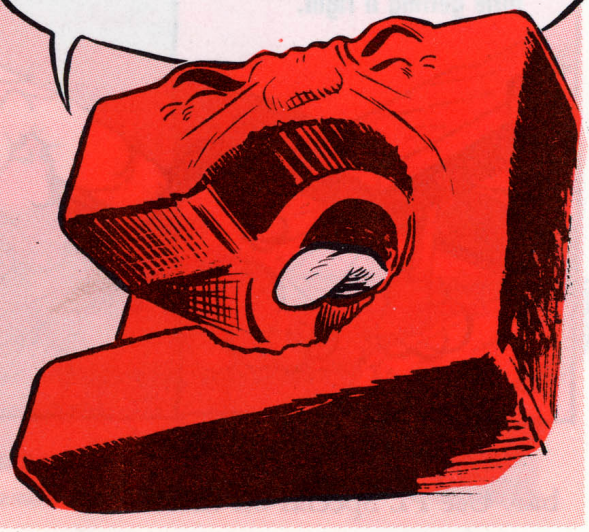
YOU, TOO, CAN BE FARSIGHTED



Yep! Curves really count, on a girl or on a self-propelled mortar sight extension.

Curved sight extension arm (8731590) needs one more curve before you can put sight unit M53 in it. MWO 9-1000-241-30 (Oct 65) has the dope for your direct support artillery mechanic who will cut the curve.

RAMMER, YES... HANDSPIKE, NO



Those handspikes used with the trails on tube artillery also make handy things such as clubs. But, and double but, they're not made to replace the cleaning rammer. Never.

Sure . . . you want to push wadding through the tube to clean the lands and grooves. However, you don't want to use a handspike to pound away at the wadding to get it on the move. All it takes is one miss and you've got some gouges — like on the breechring.

So . . . if you want to push wadding through the bore, use either end of the rammer — **not** a handspike.

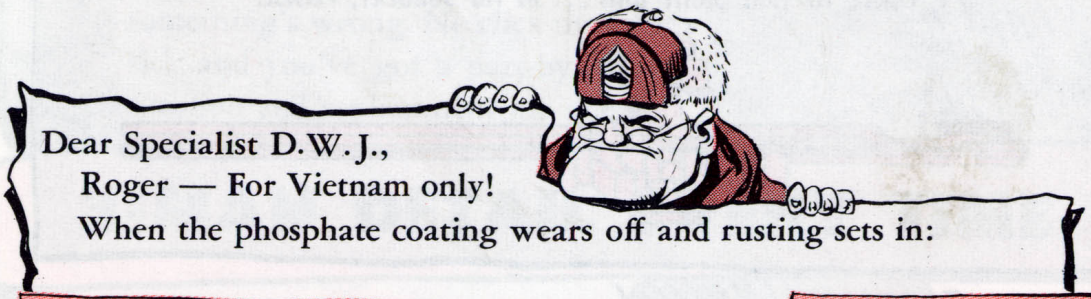
COMBAT PM FOR GUN MOUNTS...

CAREFUL HOW YOU PAINT 'EM

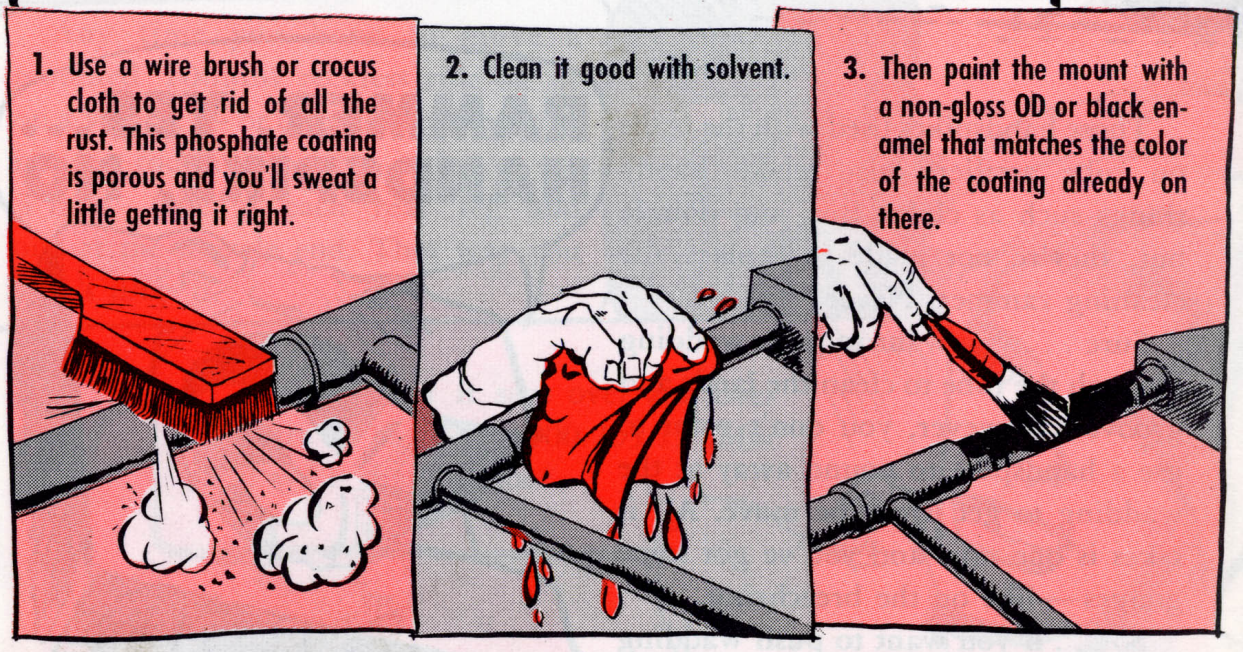
Dear Half-Mast,

Here in Vietnam, our machine gun mounts take a real beating from the mud and monsoons. It's a constant battle against rust. What say you to using a little paint to protect the non-sliding surfaces?

SP5 D. W. J.



Dear Specialist D.W.J.,
Roger — For Vietnam only!
When the phosphate coating wears off and rusting sets in:



Be real careful you don't get any paint on the bearing surface or the traverse bar. Use PL Special on them.

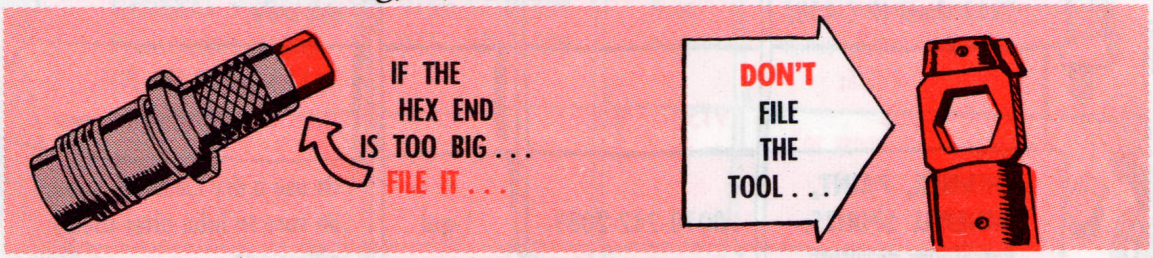
Half-Mast

FILE THE FLATS

They're still showing up now and again—those oversize hex ends on the gas cylinder plug for the M14 rifle.

This part of a bad plug is just big enough to keep you from using your combination tool on it.

Your armorer can file the flats so the plug will fit inside the combination tool. He knows what he's doing, so he'll make sure he doesn't round the corners of



the plug. And when he's through filing, he'll touch up the shiny surface with black lusterless paint—FSN 8010-582-5382.

Don't you file the hex opening on the combination tool so it'll fit the plug. If you do, the tool won't be any good for plugs that are in good shape.

TRY THE PALM METHOD

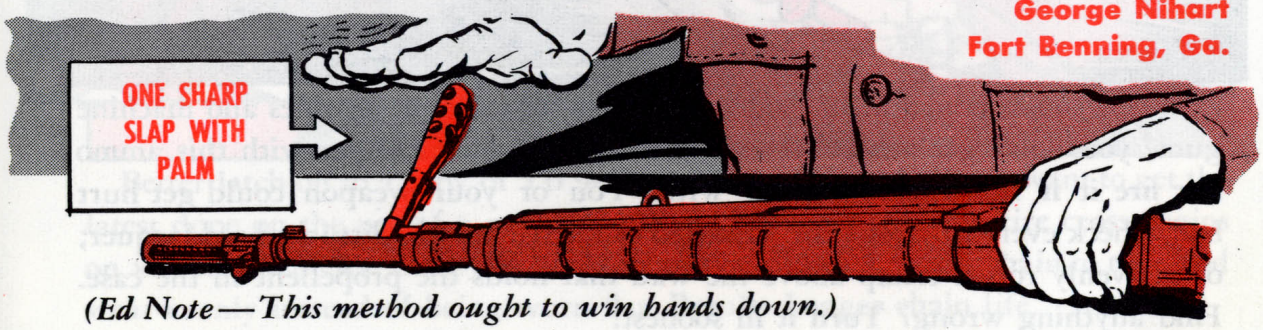
Dear Editor,

Here's a simple, safe way to loosen a stubborn M14 gas cylinder plug.

One sharp slap with your palm ought to do the trick. If it won't, you'll know the plug's too frozen and you'll need help from support.

Of course, you want to be sure you have the combo wrench on snug and hold the weapon firmly with your left hand before you deliver the blow.

George Nihart
Fort Benning, Ga.



(Ed Note—This method ought to win hands down.)

SMALL ARMS — CLEAN 'EM,

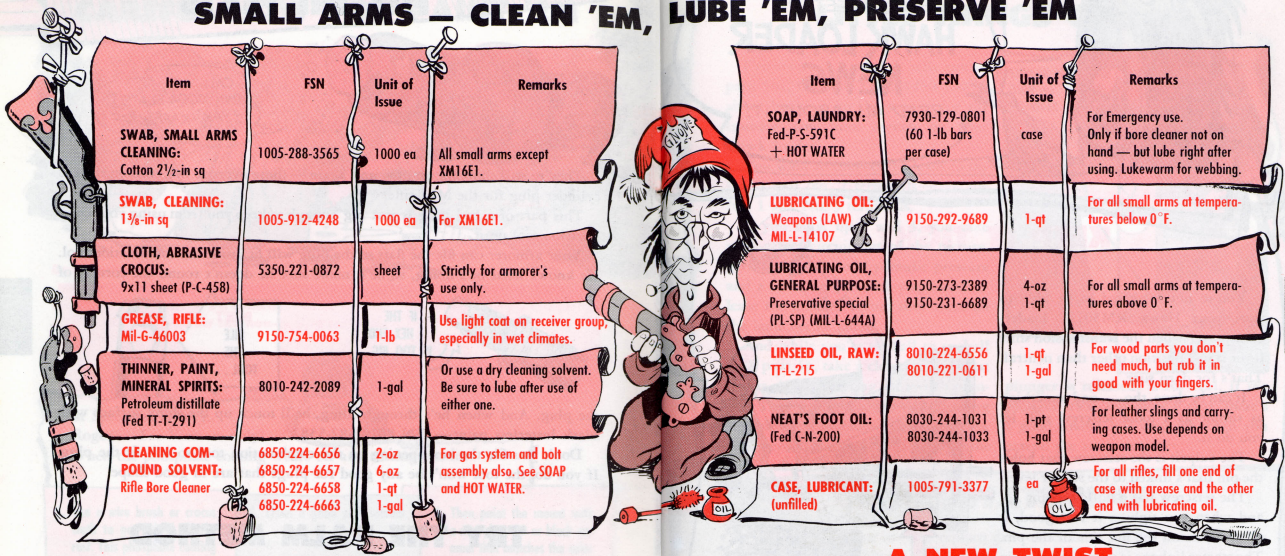
Item	FSN	Unit of Issue	Remarks
SWAB, SMALL ARMS CLEANING: Cotton 2½-in sq	1005-288-3565	1000 ea	All small arms except XM16E1.
SWAB, CLEANING: 1⅜-in sq	1005-912-4248	1000 ea	For XM16E1.
CLOTH, ABRASIVE CROCUS: 9x11 sheet (P-C-458)	5350-221-0872	sheet	Strictly for armorer's use only.
GREASE, RIFLE: Mil-G-46003	9150-754-0063	1-lb	Use light coat on receiver group, especially in wet climates.
THINNER, PAINT, MINERAL SPIRITS: Petroleum distillate (Fed TT-T-291)	8010-242-2089	1-gal	Or use a dry cleaning solvent. Be sure to lube after use of either one.
CLEANING COMPOUND SOLVENT: Rifle Bore Cleaner	6850-224-6656 6850-224-6657 6850-224-6658 6850-224-6663	2-oz 6-oz 1-qt 1-gal	For gas system and bolt assembly also. See SOAP and HOT WATER.

BAD-MOUTH AMMO

When you're issued M82 7.62MM blanks for training on rifles and machine guns, you don't get a blank check with it! You don't tamper with this ammo nor fire it if it's been tampered with. You or your weapon could get hurt bad. Check every cartridge for scratched or burred mouth; disturbed red lacquer; or unevenly rolled crimp above the wad that holds the propellent in the case. Find anything wrong? Turn it in soonest!

SMALL ARMS — CLEAN 'EM, LUBE 'EM, PRESERVE 'EM

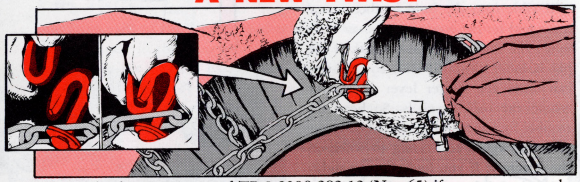
Item	FSN	Unit of Issue	Remarks
SWAB, SMALL ARMS CLEANING: Cotton 2½-in sq	1005-288-3565	1000 ea	All small arms except XM16E1.
SWAB, CLEANING: 1⅜-in sq	1005-912-4248	1000 ea	For XM16E1.
CLOTH, ABRASIVE CROCUS: 9x11 sheet (P-C-458)	5350-221-0872	sheet	Strictly for armorer's use only.
GREASE, RIFLE: Mil-G-46003	9150-754-0063	1-lb	Use light coat on receiver group, especially in wet climates.
THINNER, PAINT, MINERAL SPIRITS: Petroleum distillate (Fed TT-T-291)	8010-242-2089	1-gal	Or use a dry cleaning solvent. Be sure to lube after use of either one.
CLEANING COMPOUND SOLVENT: Rifle Bore Cleaner	6850-224-6656 6850-224-6657 6850-224-6658 6850-224-6663	2-oz 6-oz 1-qt 1-gal	For gas system and bolt assembly also. See SOAP and HOT WATER.
SOAP, LAUNDRY: Fed-P-S-591C + HOT WATER	7930-129-0801 (60 1-lb bars per case)	case	For Emergency use. Only if bore cleaner not on hand — but lube right after using. Lukewarm for webbing.
LUBRICATING OIL: Weapons (LAW) MIL-L-14107	9150-292-9689	1-qt	For all small arms at temperatures below 0°F.
LUBRICATING OIL, GENERAL PURPOSE: Preservative special (PL-SP) (MIL-L-644A)	9150-273-2389 9150-231-6689	4-oz 1-qt	For all small arms at temperatures above 0°F.
LINSEED OIL, RAW: TT-L-215	8010-224-6556 8010-221-0611	1-qt 1-gal	For wood parts you don't need much, but rub it in good with your fingers.
NEAT'S FOOT OIL: (Fed C-N-200)	8030-244-1031 8030-244-1033	1-pt 1-gal	For leather slings and carrying cases. Use depends on weapon model.
CASE, LUBRICANT: (unfilled)	1005-791-3377	ea	For all rifles, fill one end of case with grease and the other end with lubricating oil.



BAD-MOUTH AMMO

When you're issued M82 7.62MM blanks for training on rifles and machine guns, you don't get a blank check with it! You don't tamper with this ammo nor fire it if it's been tampered with. You or your weapon could get hurt bad. Check every cartridge for scratched or burred mouth; disturbed red lacquer; or unevenly rolled crimp above the wad that holds the propellent in the case. Find anything wrong? Turn it in soonest!

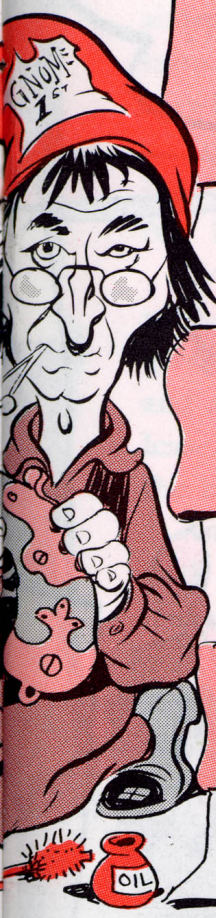
A NEW TWIST



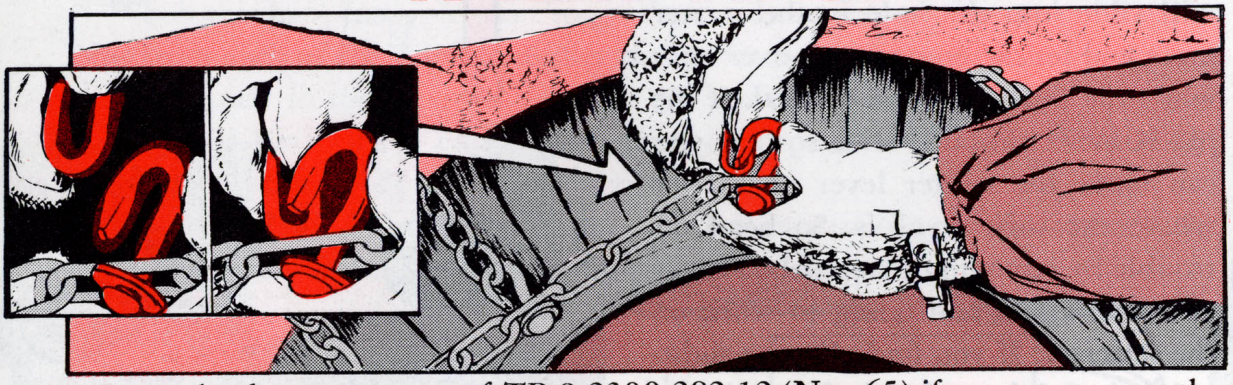
Better latch on to a copy of TB 9-2300-282-12 (Nov 65) if you want to get the latest dope on the use of a new swivel-type hook for securing tire cross chains on wheeled vehicles. Since the hook rotates, it allows the cross chain to turn and wear evenly instead of being worn flat. Result: Longer chain life.

LUBE 'EM, PRESERVE 'EM

Item	FSN	Unit of Issue	Remarks
SOAP, LAUNDRY: Fed-P-S-591C + HOT WATER	7930-129-0801 (60 1-lb bars per case)	case	For Emergency use. Only if bore cleaner not on hand — but lube right after using. Lukewarm for webbing.
LUBRICATING OIL: Weapons (LAW) MIL-L-14107	9150-292-9689	1-qt	For all small arms at temperatures below 0°F.
LUBRICATING OIL, GENERAL PURPOSE: Preservative special (PL-SP) (MIL-L-644A)	9150-273-2389 9150-231-6689	4-oz 1-qt	For all small arms at temperatures above 0°F.
LINSEED OIL, RAW: TT-L-215	8010-224-6556 8010-221-0611	1-qt 1-gal	For wood parts you don't need much, but rub it in good with your fingers.
NEAT'S FOOT OIL: (Fed C-N-200)	8030-244-1031 8030-244-1033	1-pt 1-gal	For leather slings and carrying cases. Use depends on weapon model.
CASE, LUBRICANT: (unfilled)	1005-791-3377	ea	For all rifles, fill one end of case with grease and the other end with lubricating oil.



A NEW TWIST



Better latch on to a copy of TB 9-2300-282-12 (Nov 65) if you want to get the latest dope on the use of a new swivel-type hook for securing tire cross chains on wheeled vehicles. Since the hook rotates, it allows the cross chain to turn and wear evenly instead of being worn flat. Result: Longer chain life.

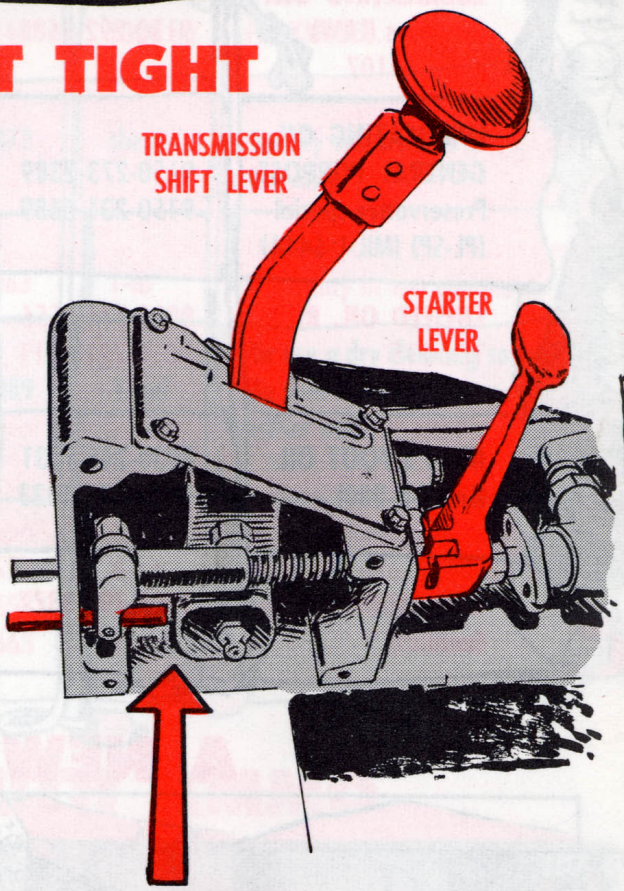
KEEP IT TIGHT

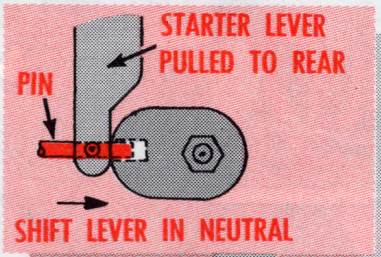
You're not supposed to be able to start your Hawk XM501E2 loader-transporter when the transmission shift lever is in a position other than neutral. That's for darn sure.

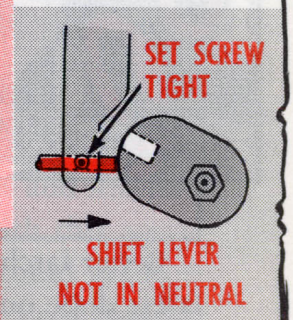
It can be done, tho . . . and something as simple as a loose setscrew will let you do it.

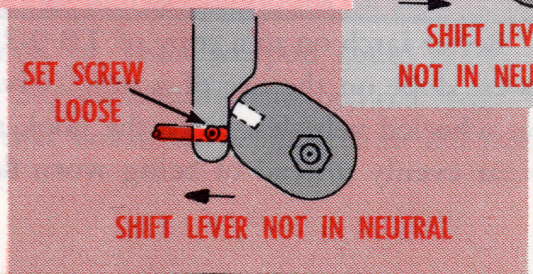
The culprit is the setscrew that holds the pin that's linked to the starter lever.

The setscrew has a hollow point . . . and when you tighten it real good, it takes a bite on the flat side of the pin. The starter linkage is set up so's the pin will slide into the hole in the starter lever and let the engine turn over only when the shift lever's in neutral. If the pin is loose, tho, it'll slide so that you can move the starter lever no matter where the shift lever is. So head off trouble by removing the gear box cover now and again and going to work on the setscrew. If you find all your tightening doesn't keep the pin from sliding, ask your support people to check the pin for wear. Their TM 9-1450-500-35 has the wear limit figures.









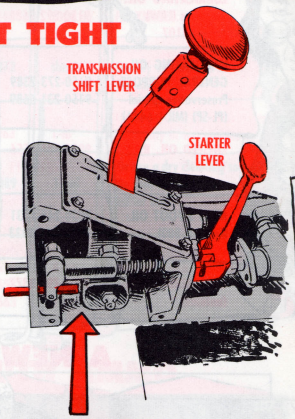
KEEP IT TIGHT

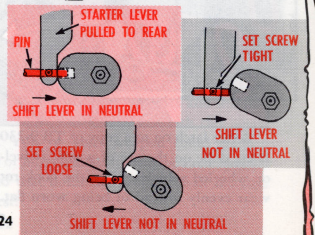
You're not supposed to be able to start your Hawk XM501E2 loader-transporter when the transmission shift lever is in a position other than neutral. That's for darn sure.

It can be done, tho . . . and something as simple as a loose setscrew will let you do it.

The culprit is the setscrew that holds the pin that's linked to the starter lever.

The setscrew has a hollow point . . . and when you tighten it real good, it takes a bite on the flat side of the pin. The starter linkage is set up so's the pin will slide into the hole in the starter lever and let the engine turn over only when the shift lever's in neutral. If the pin is loose, tho, it'll slide so that you can move the starter lever no matter where the shift lever is. So head off trouble by removing the gear box cover now and again and going to work on the setscrew. If you find all your tightening doesn't keep the pin from sliding, ask your support people to check the pin for wear. Their TM 9-1450-500-35 has the wear limit figures.





LITTLE THINGS COUNT

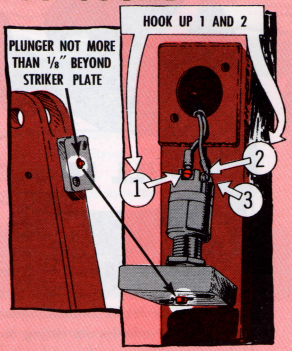
Right.

F'instance . . . what it tells you in para 56a, Ch 2 to TM 9-1450-500-20 about hooking up the wiring for the transfer arm limit switch on your Hawk loader.

You want to connect the leads to the No. 1 and No. 2 terminals—not the No. 1 and No. 3 terminals.

If you hook up 1 and 3, you take your safety circuit out of the picture, giving you reduced hydraulic pressure and a situation in which you could release the missiles before they were on the launcher or pallet.

And while you're eyeball to eyeball with para 56, take a close look at what it says about adjusting the switch plunger. That warning about not allowing the plunger to extend more than ⅛ inch beyond the striker plate (when the plunger is released) is for real. If the plunger sticks out more'n that, there's a good chance it'll snap off when you extend the superstructure.

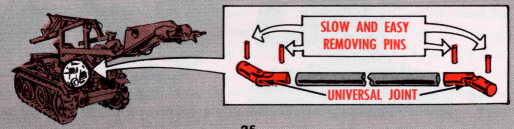


JOINT STATEMENT

Comes the day you have to replace the rubber boot for the universal joints on the control assembly for your loader.

When this happens, you want to go slow and easy as you remove the 2 spring pins from each of the 2 joints. Either that or latch on to new pins and make sure they're handy in case you beat up the old ones in removing them. If you do damage the pins, you'll find replacements on page 90 of TM 9-1450-500-20P (Jan 61)—under FSN 5315-058-5991.

As for the boot and universal joint . . . they're part of an assembly that you find under FSN 2590-777-9482—on page 90 of the -20P.



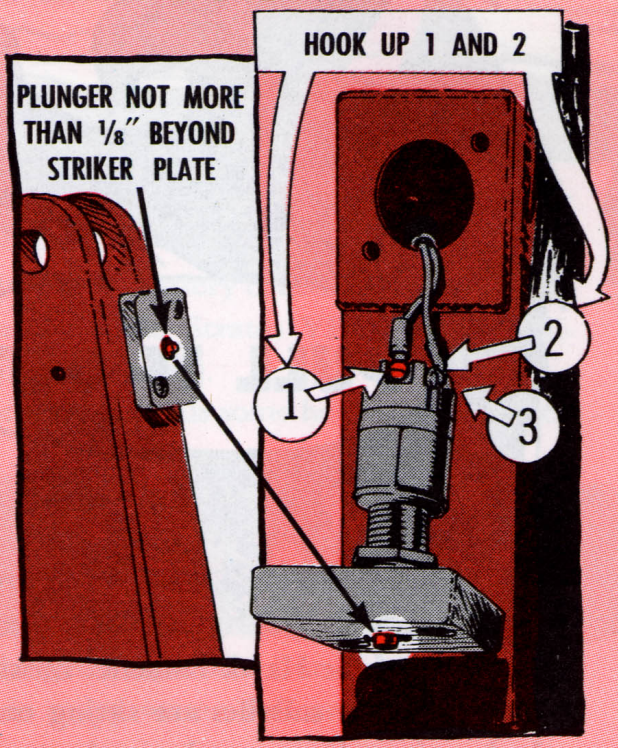
LITTLE THINGS COUNT

Right.

F'rinstance . . . what it tells you in para 56a, Ch 2 to TM 9-1450-500-20 about hooking up the wiring for the transfer arm limit switch on your Hawk loader.

You want to connect the leads to the No. 1 and No. 2 terminals—not the No. 1 and No. 3 terminals.

If you hook up 1 and 3, you take your safety circuit out of the picture, giving you reduced hydraulic pressure and a situation in which you could release the missiles before they were on the launcher or pallet.



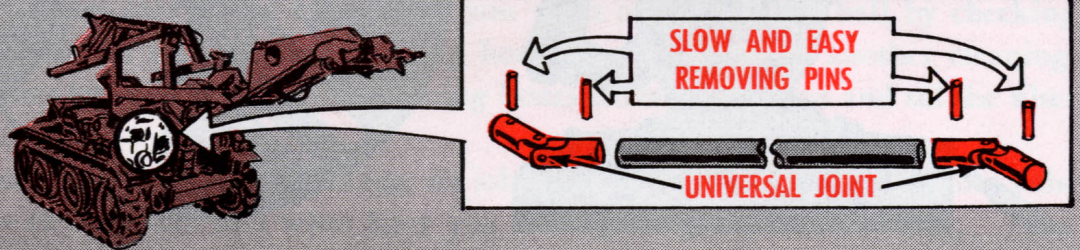
And while you're eyeball to eyeball with para 56, take a close look at what it says about adjusting the switch plunger. That warning about not allowing the plunger to extend more than 1/8 inch beyond the striker plate (when the plunger is released) is for real. If the plunger sticks out more'n that, there's a good chance it'll snap off when you extend the superstructure.

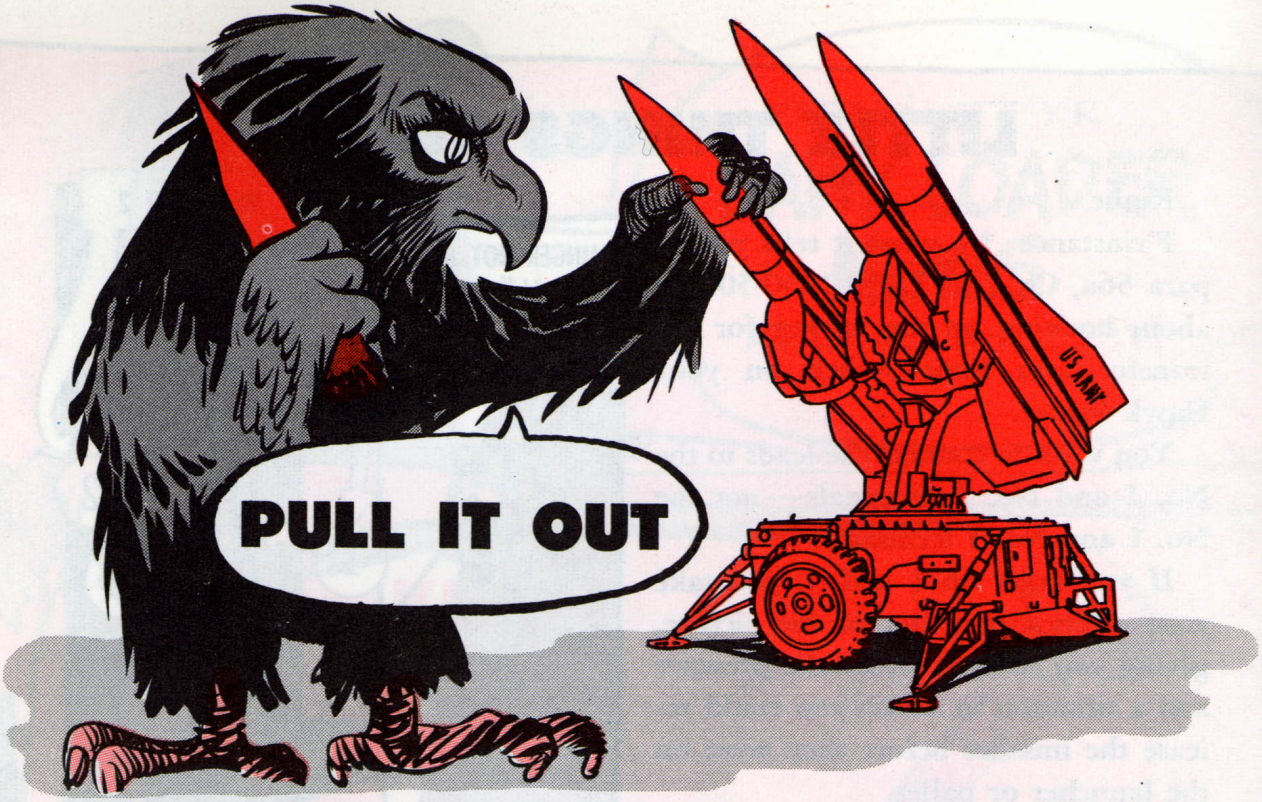
JOINT STATEMENT

Comes the day you have to replace the rubber boot for the universal joints on the control assembly for your loader.

When this happens, you want to go slow and easy as you remove the 2 spring pins from each of the 2 joints. Either that or latch on to new pins and make sure they're handy in case you beat up the old ones in removing them. If you do damage the pins, you'll find replacements on page 90 of TM 9-1450-500-20P (Jan 61)—under FSN 5315-058-5991.

As for the boot and universal joint . . . they're part of an assembly that you find under FSN 2590-777-9482—on page 90 of the -20P.



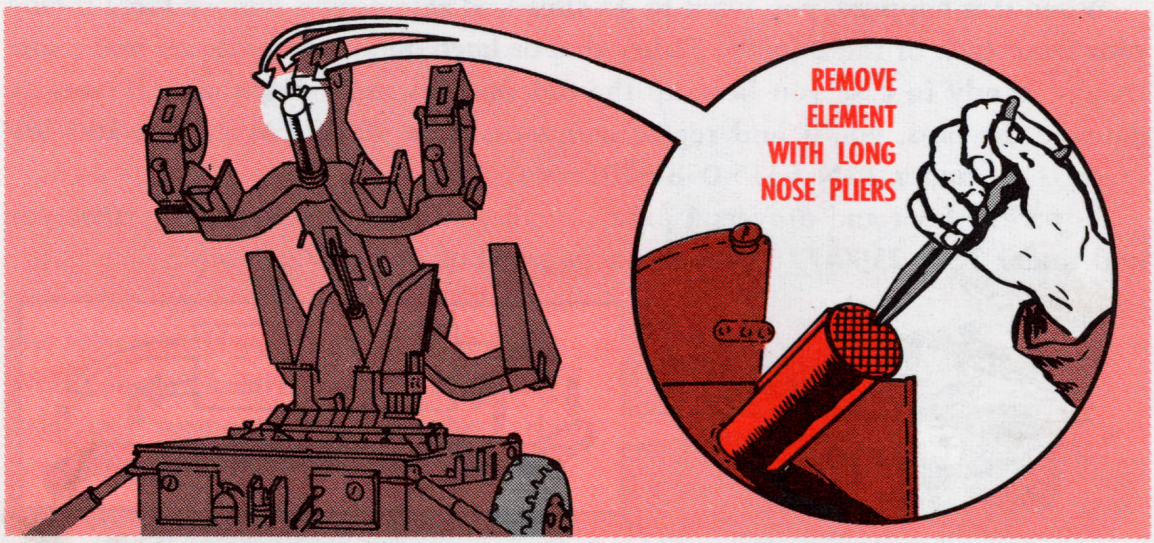


The idea of the Hawk launcher missile cooling system is just what it says—to cool whatever missiles are sitting on the launcher. That makes sense.

It doesn't make sense, tho, to have a cooling system with a bollixed up air duct—one that won't let air get to the birds. And this is what happens when the honeycomb element in the duct gets battered for one reason or another.

When the element in your launcher gets so beat up that air barely makes it through to the missiles, get yourself a pair of longnose pliers. Put 'em in the honeycomb openings as far as they can go and then twist and pull. And keep twisting and pulling until you have all the element out of the duct.

At one time it was figured that the element was needed to cut down on noise when the launcher was in operation. But the element doesn't make that much difference. So after you've pulled it from the air duct, don't sweat it.



OIL FILTER WITH FILTER OIL

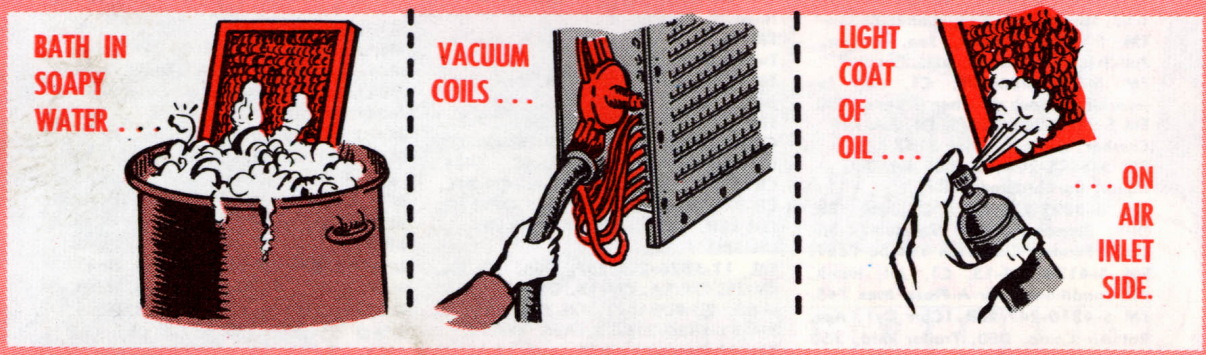
Take some electronic equipment . . . put it in a small, inclosed spot . . . and it won't take long to warm up to the situation.

This is the deal you run into with your Hawk battery control central . . . and that's why the BCC is equipped with that Fairchild Stratos VEA4-3 air conditioner — to keep the electronic gear as cool as possible.

The air conditioner will do its job, but it sure needs some help — also spelled PM — from you.

If there's one place where the help is really needed, it's the air filter in the evaporator section. The filter needs to be wet, not dry. And wet means sprayed with oil, the idea being to catch dust, dirt, lint and other assorted junk.

The odds are that the filter in your air conditioner is dirty. If so, the easiest way out would be to throw it away and get a new one. But it's a permanent type, so you clean it by giving it a bath in soapy water, followed by a rinse in clear water.

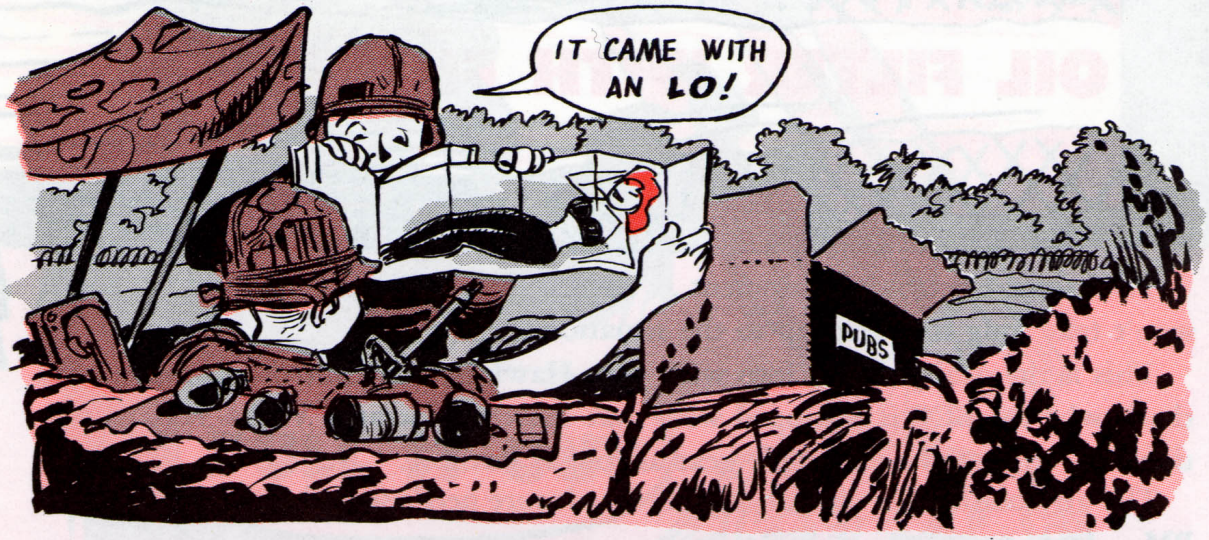


While you're waiting for the filter to dry (and it has to be dry), use your vacuum cleaner to work on the evaporator coils. The coils are bound to need cleaning. Then back to the filter — the AIR INLET SIDE — which you spray with a light coat of filter oil. The oil you want is water soluble and is listed under FSN 4130-860-0042 on page 45 of FSC 4120/30 ML (Jul 65).

After the filter is oiled, put it back in the frame, being careful not to slam it into the thermostat. Fasten the filler clips . . . wipe away any excess oil . . . and put back the panel.

That takes care of the filter. Now you want to stay on the ball by checking it every 24 air conditioner operating hours to see if it needs another cleaning. But don't let it go beyond 48 operating hours before you clean and oil the filter again.

You'll know the filter is doing its job when it becomes dirty. And that's the idea — to keep dirt and what have you from getting beyond the filter.



A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 with latest changes. The latest Indexes you need are DA Pamphlet 310-4 *(May 66) and* DA Pamphlet 310-6 *(Jul 66).*

TECHNICAL MANUALS

TM 5-315, C1, Jul, Troop Fire Protection.
TM 5-2410-214-12, Jul, Tractor, Full-Trkd, Low Speed, DED, Cat D-7.
TM 5-2410-214-20P, Jun, Tractor, Full-Trkd, Low Speed, DED, Cat D-7.
TM 5-3805-206-20P, C1, Jul, Intrenching Mach, Barber-Greene 750.
TM 5-3820-205-20P/2, C1, Jul, Jaw Crusher, Eagle Crusher 5157.
TM 5-3895-208-10, C1, Jul, Bit. Mixer, Barber-Greene 848.
TM 5-3895-220-20P, C2, Jul, Bit. Dist., Standard Steel Works 424-56-CE61. Seaman-Gunnison 424-56-CE61.
TM 5-4120-213-15, C1, Jul, Hawk, Air Conditioner, Air-A-Plane Max 745.
TM 5-4310-247-20P (Corr Cy), Apr, Rot Air Comp, DED, Trailer Mtd, 250 CFM, 100 PSI, Joy RPV250DC20MS1.
TM 5-4930-207-12, May, Lube Serv Unit, Mtd, Henry Spen 901765-1.
TM 5-6115-339-25P, Jun, Gen Set, 60KW, Mtd, Airesearch GTGE 70-9-2.
TM 5-6115-363-15, May, Power Plant, Elec AN/MJQ-4.
TM 9-1055-201-12P, C1, Jun, Launcher, Rocket, M20A1, M20A1B1.
TM 9-1410-302-15P/2/2, Jun, Sergeant.
TM 9-1430-250-15P/21/1, Jun, Nike-Herc, Nike-Herc Imp.
TM 9-1430-268-15P/2, May, Nike-Herc, Nike-Herc Imp.
TM 9-2320-222-20P, Jun, M88
TM 9-2330-222-24P, C1, Jun, M349A Refrig Van, 7½ Ton.
TM 9-2330-267-14, C2, Jun, Water Tank Trailer, 400 Gal, M107, M107A1, M107A2, M107A2C.
TM 9-2350-201-12, C8, May, M41, M41A1, M41A2, M41A3 Tanks.
TM 9-2350-201-12, C10, Jul, M41, M41A1, M41A2, M41A3 Tanks.
TM 9-2350-201-20P, C3/, Jul, M41A2, M41A3 Tanks.
TM 9-2350-209-20P, C1, Jun, M52, M52A1 How.
TM 9-2350-217-ESC/2, C1, Jun, M109 SP How.
TM 9-4935-274-15P/1/1, Jun, Nike-Herc, Nike-Herc Imp.
TM 9-4935-306-15P/2/1, Jun, Sergeant.
TM 9-4935-306-15P/3/1, May, Sergeant.
TM 9-4935-375-15P/1, Jun, Pershing.
TM 9-7204, C7, Jul, M52, M52A1 How.
TM 9-7218, C8, Jul, M42, M42A1 Twin AA SP Gun.
TM 10-1670-214-23, Jun, Parachute, pers.
TM 11-5821-247-25P, Jun, CV-2A, CV-2B, O-1A, OV-1A, OV-1B, OV-1C, U-1A, U-6A, U-8D, U-8E, U-8F, CH-21B, CH-21C, CH-34A, CH-34C, CH-37A, CH-37B, OH-13E, OH-13G, OH-13H, UH-1, UH-1A, UH-1B, UH-1D.
TM 11-5826-200-25P, Jun, CV-2A, CV-2B, OV-1A, OV-1B, OV-1C, U-6A, U-8D, RU-8D, U-8F, CH-34A, UH-1A.
TM 11-5850-218-12, Aug, OV-1C.
TM 11-5985-262-25P, Aug, Ant AS-1729/VRC.
TM 55-1520-202-10CL, Jul, CH-34.
TM 55-1520-204-10CL, Jul, OH-13.
TM 55-1520-209-10, C12, Aug, CH-47.
TM 55-1520-209-20, C2, Jun, CH-47.
TM 55-1520-209-20, C3, Aug, CH-47.
TM 55-1520-211-20, C4, Aug, UH-1A-1B.

MODIFICATION WORK ORDERS

MWO 9-1430-251-30/30, Jul, Nike-Herc Imp.
MWO 9-1430-253-30/31, Jul, Nike-Herc Imp.
MWO 9-1430-376-30/3, -30/7, Jul, Pershing.
MWO 9-1430-505-30/22, Jul, Hawk.
MWO 9-1430-511-30/9, -30/10, -30/11, -30/12, Jul, Hawk.
MWO 9-1440-375-30/21, -30/42, Jul, Pershing.
MWO 9-1440-500-20/27, Jul, Hawk.
MWO 9-1450-250-30/13, Jun, Nike-Herc, Nike-Herc Imp.
MWO 9-2300-216-20/8, Jun, M107 SP Gun, M1108-in How.
MWO 9-2300-224-30/22, Jun, M113, M113A1, Carrier, M548, Cargo Carrier.
MWO 9-2300-276-20/1, Jun, M60, M60A1, M48A3 Tanks.
MWO 9-2300-283-30/1, Jul, M107 Gun, M110 How, M578 Recovery Veh.
MWO 9-2330-300-30/1, Jul, Sergeant.
MWO 9-2330-300-30/2, Jul, Sergeant.
MWO 9-2350-217-30/5, Jul, M108, M109 SP How.
MWO 9-2805-212-40/2, Jun, M41, M41A1, M41A2, M41A3 Tanks, M52, M52A1 How, M42, M42A1, M44, M44A1 SP Guns.
MWO 9-4900-500-30/52, Jul, Hawk.
MWO 9-4935-377-30/103, -30/116, -30117, Jul, Pershing.
MWO 9-4935-501-30/6, Jul, Hawk.
MWO 9-4935-501-30/7, Jul, Hawk.
MWO 9-4935-503-30/22, Jul, Hawk.
MWO 9-4935-504-30/32, Jul, Hawk.
MWO 9-4935-508-30/30, Jul, Hawk.
MWO 9-4935-515-30/13, Jul, Hawk.
MWO 55-1510-206-20/3, C1, Aug, CV-2.
MWO 55-1510-206-34/63, C2, Aug, CV-2.
MWO 55-1520-209-20/55, Sep, CH-47.
MWO 55-1520-209-34/110, C2, & C3, Aug, CH-47.

MISCELLANEOUS

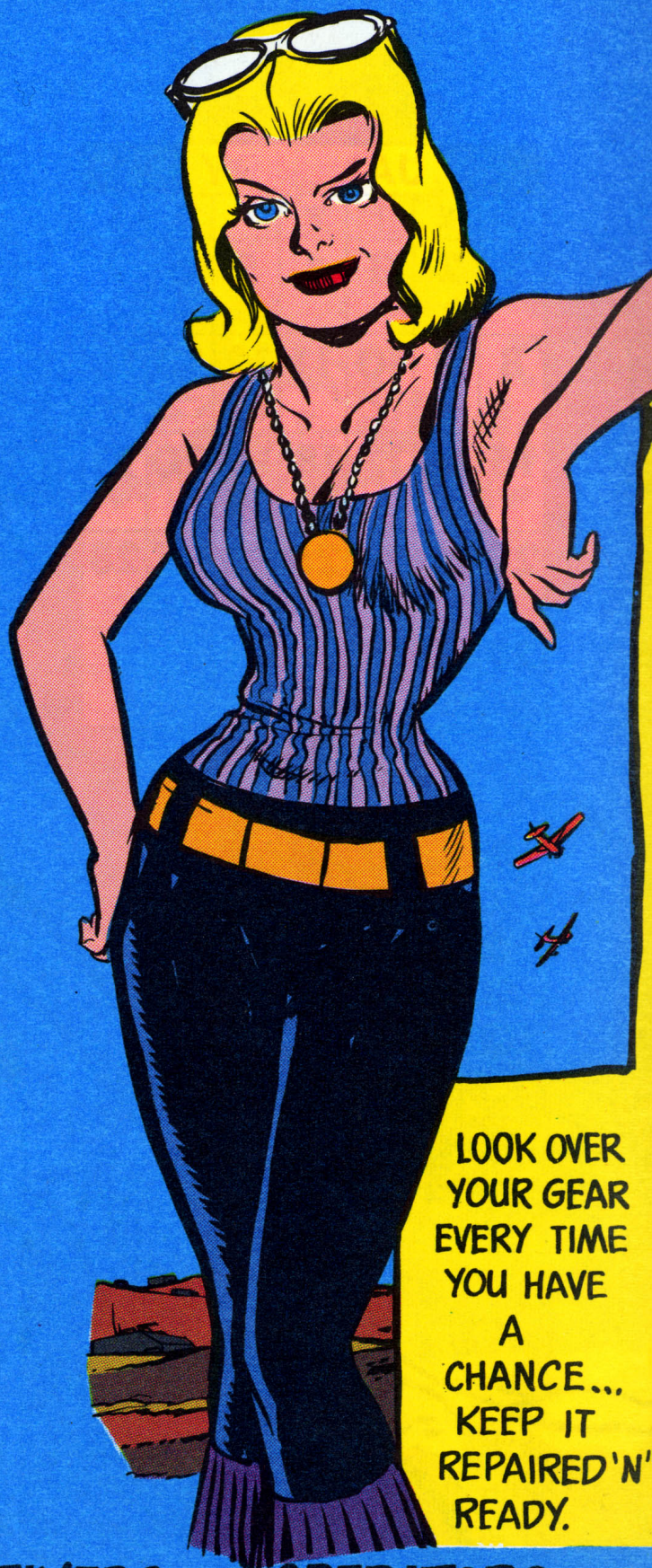
SC 6545-8-CL-E12, Jun, Med Equip Set, Hosp Expansion, Z1, 100-Bed.
SC 6675-93-CL-E36, C1, Jun, Topo Map Set, Trk-Mtd.
SM 5-4-4940-S07, C4, Jun, Supple. Equip, Maint Co.
SM 5-4-6630-S01, C1, Jun, Water Qual Control Set.
TB 11-6625-316-12/1, Jun, Test Set Data.
TB 55-1510-201-34/1, May, U-8.
TB 55-1510-203-20/5, Aug, U-6.
TB 750-931-1/1, C1, Sep, EIR Digest, All Fixed Wing.
TB 750-931-½, C2, Sep, EIR Digest, All Rotor Wing.

JOE'S DOPE
CONNIE'S 1967 CALENDAR
JANUARY
S M T W T F S
1 2 3 4 5 6 7
1 2 3 4 5 6 7
8 9 10 11 12 13 14
8 9 10 11 12 13 14
15 16 17 18 19 20 21
15 16 17 18 19 20 21
22 23 24 25 26 27 28
22 23 24 25 26 27 28
29 30 31
29 30 31
WHEN IT'S COLD OUTSIDE... GIVE YOUR SENSITIVE EQUIPMENT A BREAK— KEEP IT WARM.
FEBRUARY
S M T W T F S
1 2 3 4
32 33 34 35
5 6 7 8 9 10 11
36 37 38 39 40 41 42
12 13 14 15 16 17 18
43 44 45 46 47 48 49
19 20 21 22 23 24 25
50 51 52 53 54 55 56
26 27 28
57 58 59
KEEP DRY CELL BATTERIES UNDER YOUR CLOTHES IN EXTREME COLD.

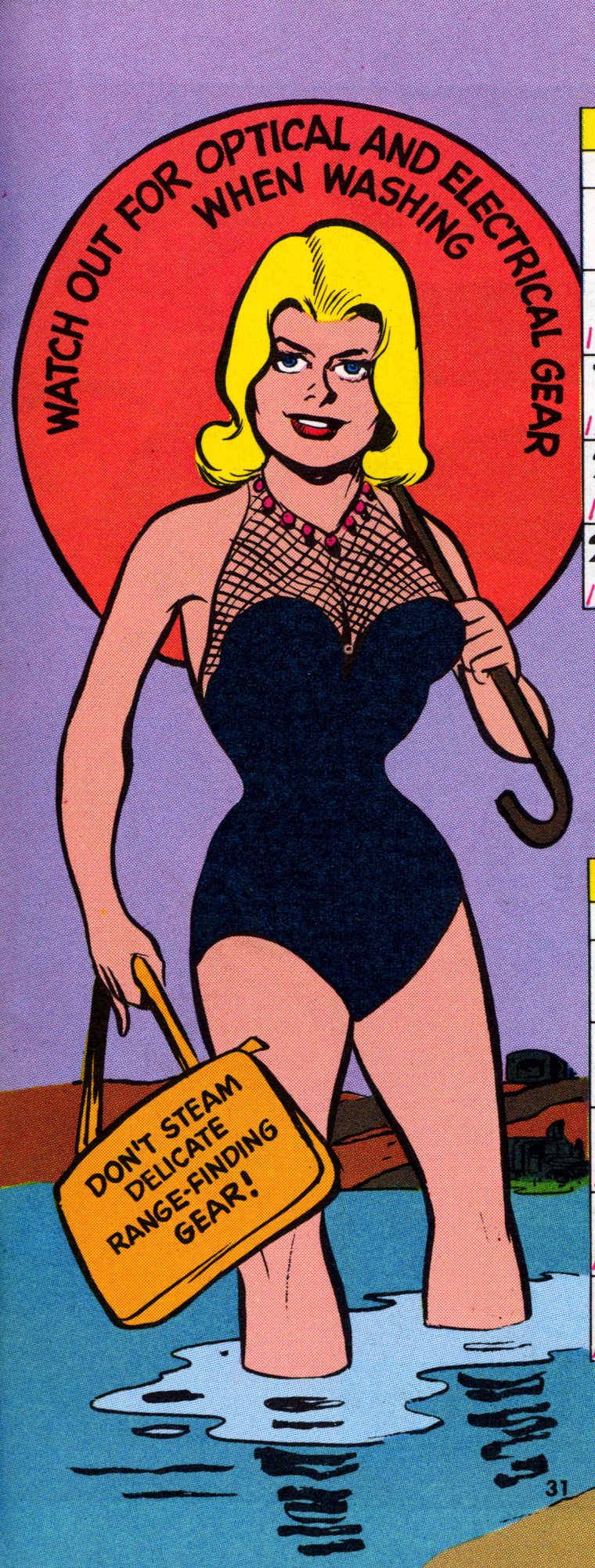
MARCH						
S	M	T	W	T	F	S
			1 60	2 61	3 62	4 63
5 64	6 65	7 66	8 67	9 68	10 69	11 70
12 71	13 72	14 73	15 74	16 75	17 76	18 77
19 78	20 79	21 80	22 81	23 82	24 83	25 84
26 85	27 86	28 87	29 88	30 89	31 90	

Old Atlas carried the world on his shoulders . . . All you need is your PLL . . . keep it up to snuff.

APRIL						
S	M	T	W	T	F	S
						1 91
2 92	3 93	4 94	5 95	6 96	7 97	8 98
9 99	10 100	11 101	12 102	13 103	14 104	15 105
16 106	17 107	18 108	19 109	20 110	21 111	22 112
23 113	24 114	25 115	26 116	27 117	28 118	29 119
30 120						



PM IS FOR FIGHTERS, FIXERS AND OPERATORS



MAY

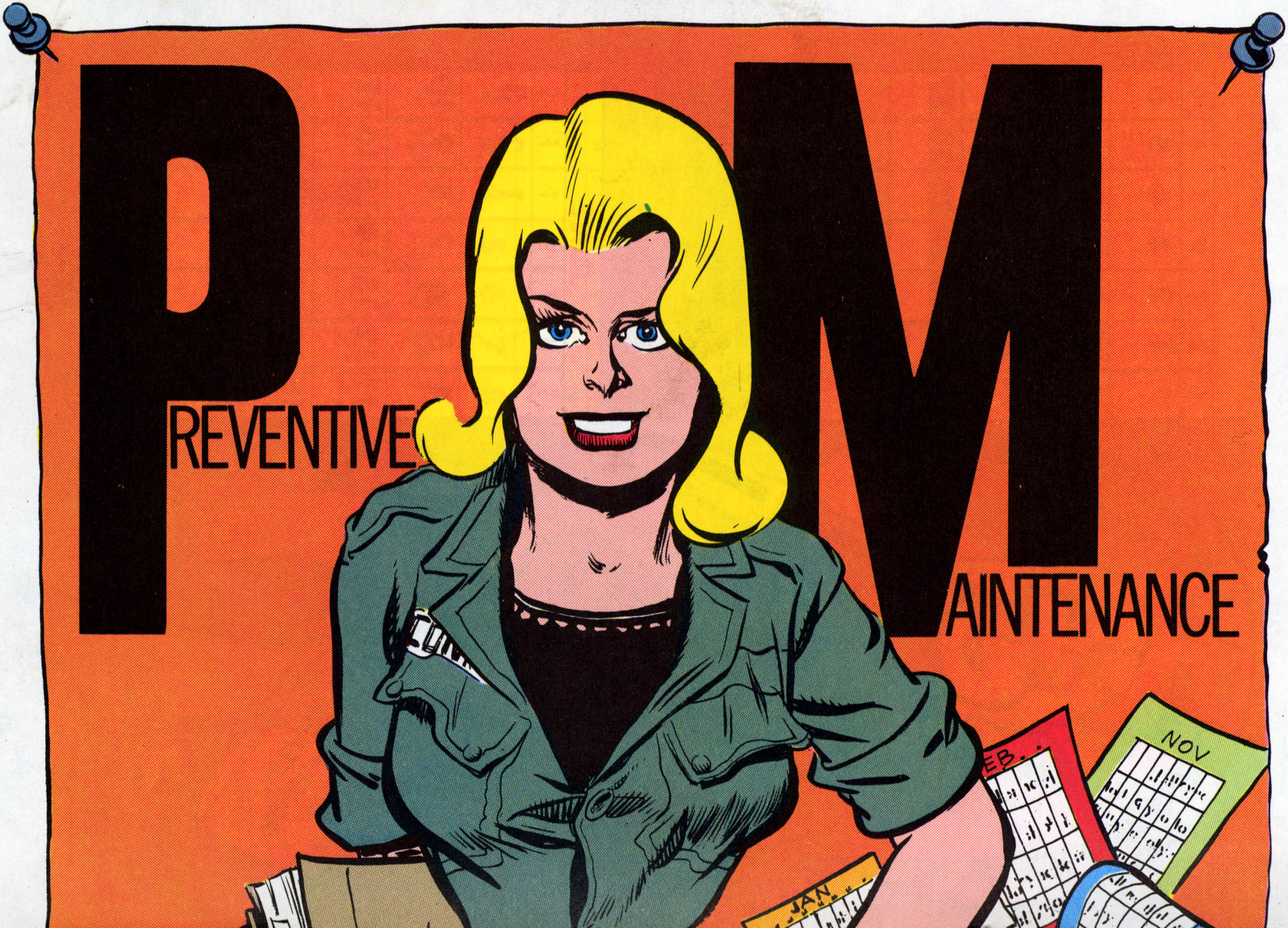
S	M	T	W	T	F	S
	1	2	3	4	5	6
	121	122	123	124	125	126
7	8	9	10	11	12	13
127	128	129	130	131	132	133
14	15	16	17	18	19	20
134	135	136	137	138	139	140
21	22	23	24	25	26	27
141	142	143	144	145	146	147
28	29	30	31			
148	149	150	151			

When working on a vehicle's electrical system take off the ground cable first — and put it back on last.

JUNE

S	M	T	W	T	F	S
				1	2	3
				152	153	154
4	5	6	7	8	9	10
155	156	157	158	159	160	161
11	12	13	14	15	16	17
162	163	164	165	166	167	168
18	19	20	21	22	23	24
169	170	171	172	173	174	175
25	26	27	28	29	30	
176	177	178	179	180	181	

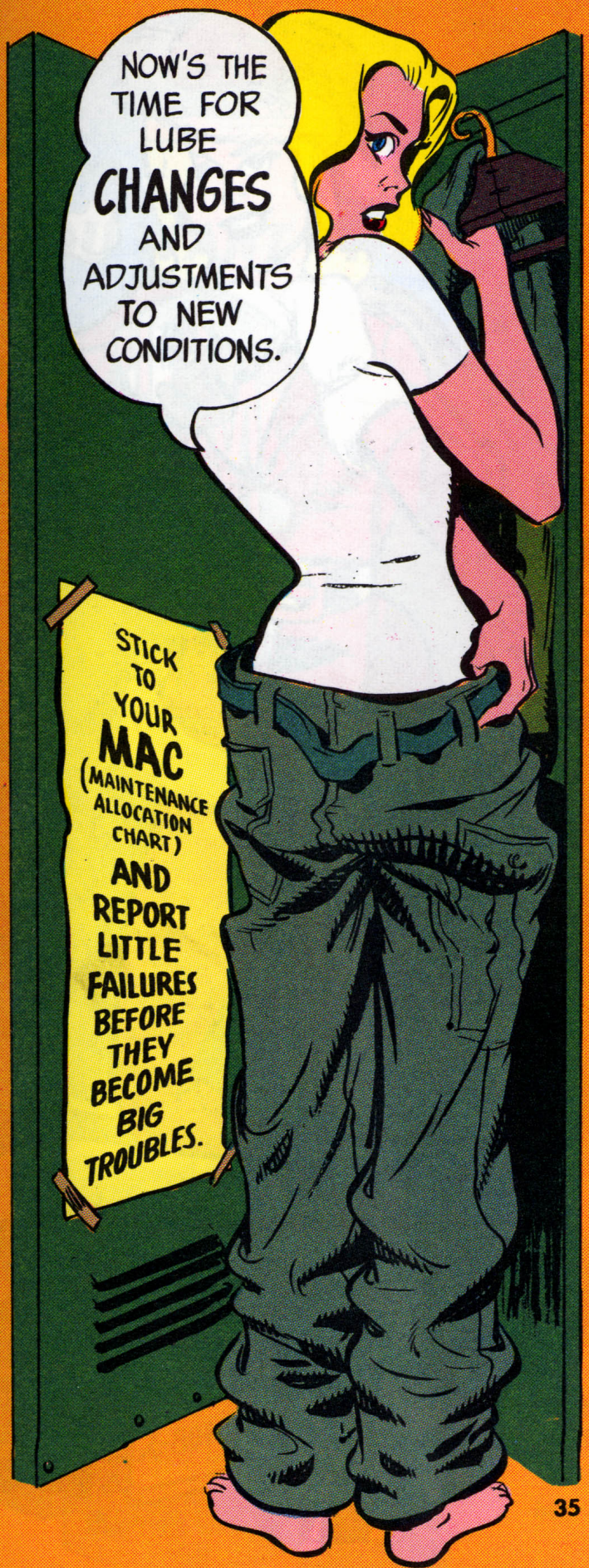
USE... DON'T ABUSE YOUR ARMY EQUIPMENT


PREVENTIVE
MAINTENANCE
JAN
NOV

PREVENTIVE MAINTENANCE
DONE ANY LATELY?
JAN
FEB
NOV
MAR
APR
MAY
AUG
WE HAVE THE WORLD'S B
IF YOU WANT TO DISPLAY THIS CENTERPIE
IT UP.

DONE ANY LATELY?
MAR
MAY
APR
AUG
WE HAVE THE WORLD'S B
...Tak
it
IF YOU WANT TO DISPLAY THIS CENTERPIE
ARD, OPEN STAPLES,
IT UP.

JULY
S M T W T F S
1 182
2 183 3 184 4 185 5 186 6 187 7 188 8 189
9 190 10 191 11 192 12 193 13 194 14 195 15 196
16 197 17 198 18 199 19 200 20 201 21 202 22 203
23 204 24 205 25 206 26 207 27 208 28 209 29 210
30 211 31 212
AUGUST
S M T W T F S
1 213 2 214 3 215 4 216 5 217
6 218 7 219 8 220 9 221 10 222 11 223 12 224
13 225 14 226 15 227 16 228 17 229 18 230 19 231
20 232 21 233 22 234 23 235 24 236 25 237 26 238
27 239 28 240 29 241 30 242 31 243
HAPPINESS IS KEEPING YOUR THROTTLE FROM CREEPING. YOU KNOW THE LINKAGE WAS CHECKED ON DAILY PM.
DON'T FIDDLE WITH KNOBS, DIALS AND SWITCHES ON RADIOS AND RADARS... AND KEEP THOSE FILTERS CLEAN!
PM'S NOT JUST FOR MAINTENANCE TYPES - IT'S FOR EVERYBODY - ESPECIALLY OPERATORS!
SUN TAN OIL
TM 11-2648



SEPTEMBER						
S	M	T	W	T	F	S
					1	2
					244	245
3	4	5	6	7	8	9
246	247	248	249	250	251	252
10	11	12	13	14	15	16
253	254	255	256	257	258	259
17	18	19	20	21	22	23
260	261	262	263	264	265	266
24	25	26	27	28	29	30
267	268	269	270	271	272	273

Know what your gear can do — and never overload or overwork it!

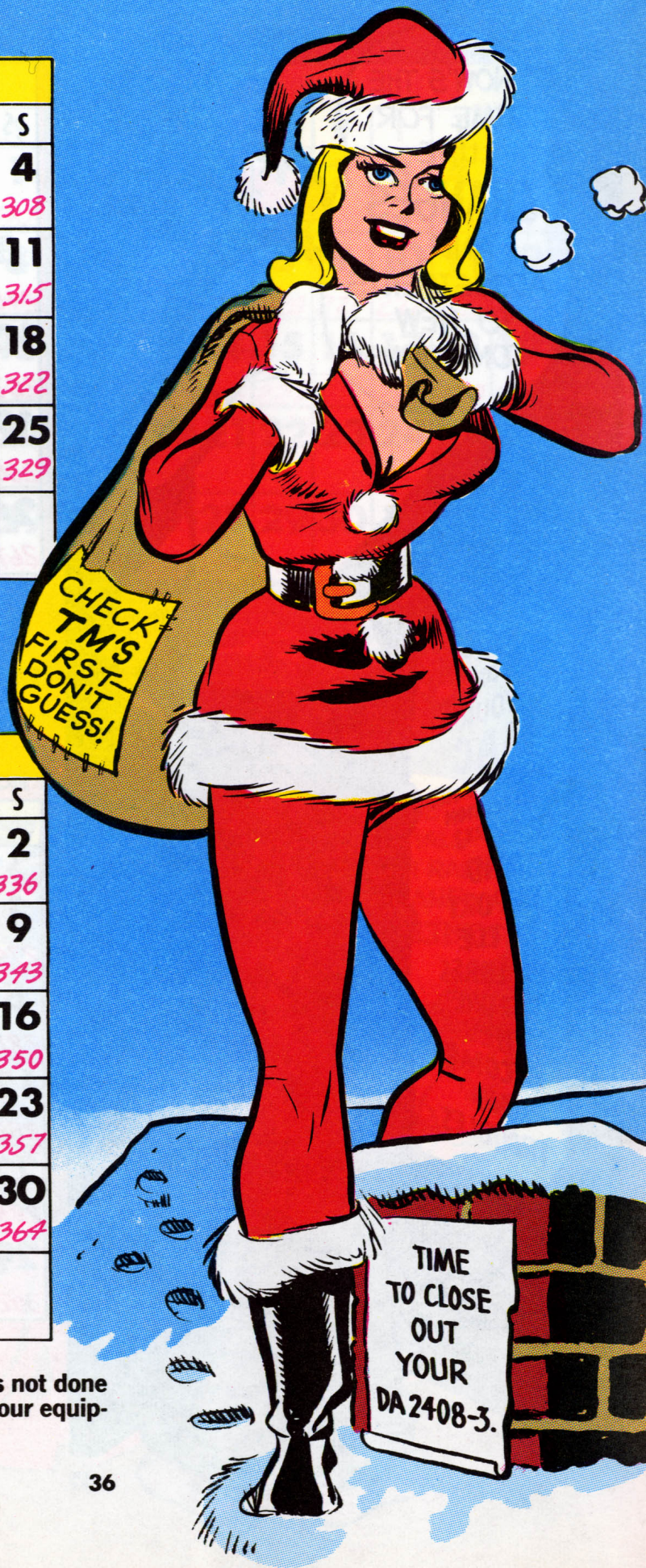
OCTOBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
274	275	276	277	278	279	280
8	9	10	11	12	13	14
281	282	283	284	285	286	287
15	16	17	18	19	20	21
288	289	290	291	292	293	294
22	23	24	25	26	27	28
295	296	297	298	299	300	301
29	30	31				
302	303	304				

NOVEMBER

S	M	T	W	T	F	S
			1	2	3	4
			305	306	307	308
5	6	7	8	9	10	11
309	310	311	312	313	314	315
12	13	14	15	16	17	18
316	317	318	319	320	321	322
19	20	21	22	23	24	25
323	324	325	326	327	328	329
26	27	28	29	30		
330	331	332	333	334		

DECEMBER

S	M	T	W	T	F	S
					1	2
					335	336
3	4	5	6	7	8	9
337	338	339	340	341	342	343
10	11	12	13	14	15	16
344	345	346	347	348	349	350
17	18	19	20	21	22	23
351	352	353	354	355	356	357
24	25	26	27	28	29	30
358	359	360	361	362	363	364
31						
365						

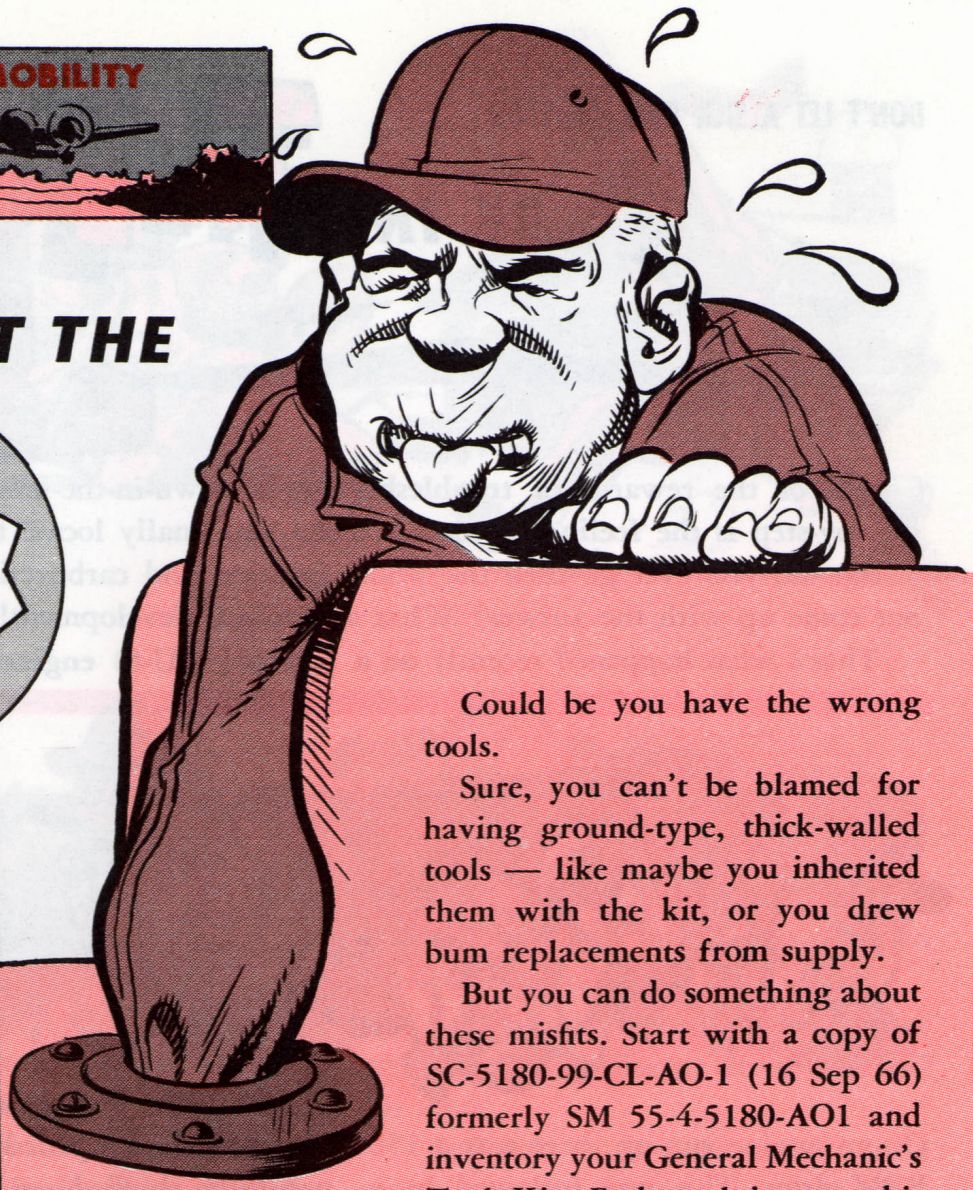


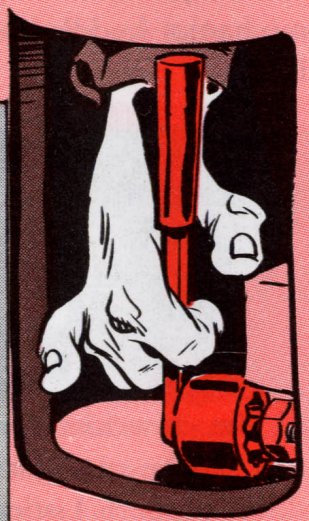
Always remember . . . the job's not done till the paper work's done. Keep your equipment records up to the minute.

TOOL WISE . . .

YOU WANT THE SLIM -JIM TYPE

Having trouble with some of the tools in your Aircraft General Mechanic's Tool Kit —like maybe some socket and open-end wrenches don't snuggle over nuts and bolts in close quarters like they should?



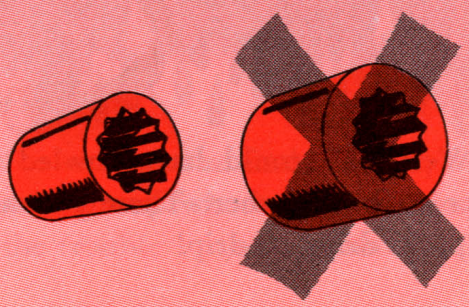


Could be you have the wrong tools.

Sure, you can't be blamed for having ground-type, thick-walled tools — like maybe you inherited them with the kit, or you drew bum replacements from supply.

But you can do something about these misfits. Start with a copy of SC-5180-99-CL-AO-1 (16 Sep 66) formerly SM 55-4-5180-AO1 and inventory your General Mechanic's Tool Kit. Each tool in your kit should fit the pub description to a "T".

If you find a tool that doesn't meet the long-line description in the pub, order a replacement, giving the exact nomenclature and FSN. Add in the request, "thin-wall, no substitute acceptable" . . . to be sure you get the slim-jim type.



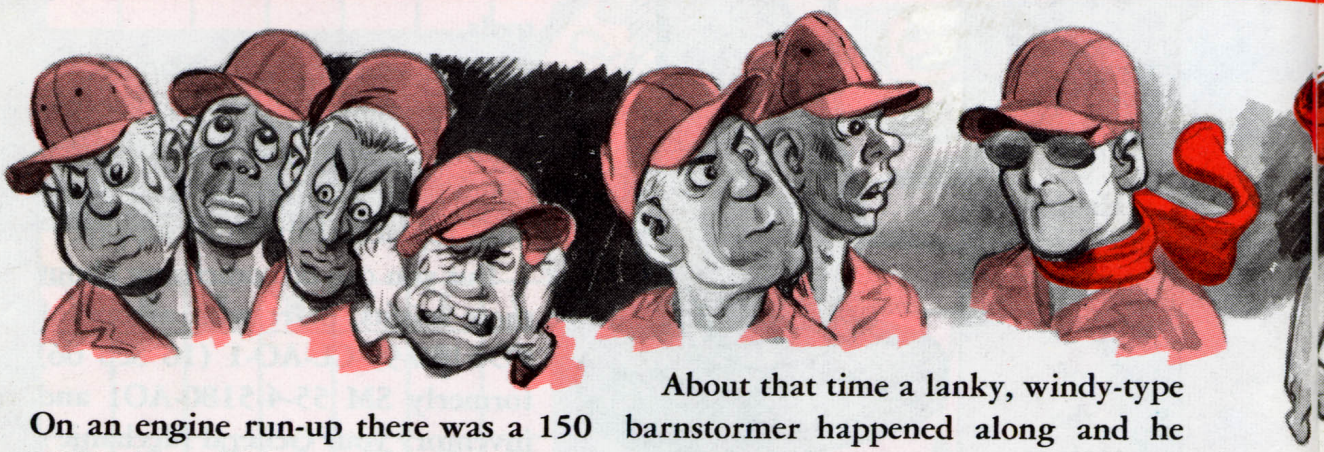
DON'T LET A SICK BIRD BUG YOU . . .

BE IN THE KN

One of the rewards of troubleshooting a down-in-the-mouth bird engine step-by-step is the feeling of success when you finally locate the problem.

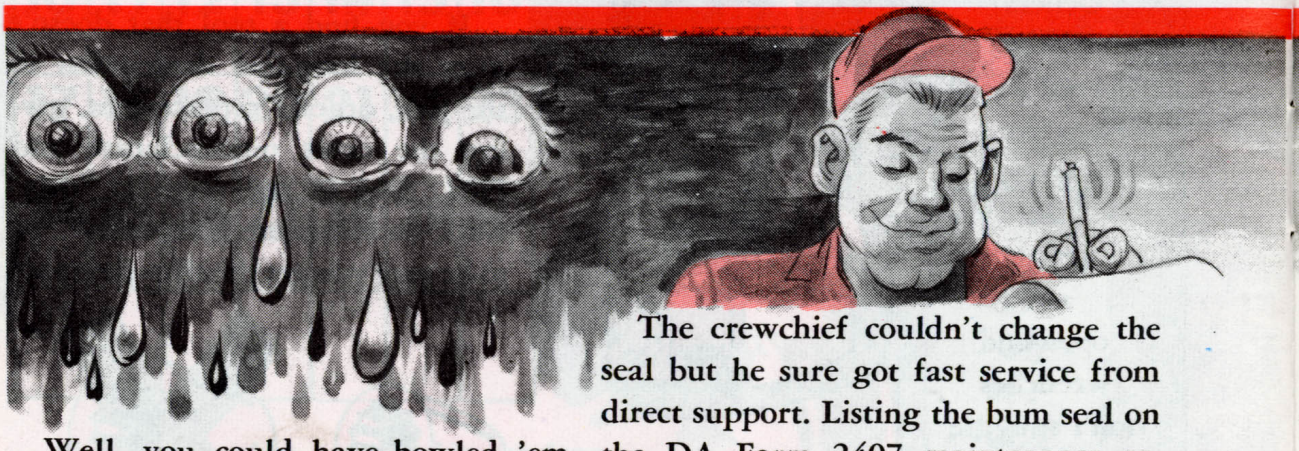
But did you ever go thru the whole ignition and carburetion bit and still not come up with the answer? What a revoltin' development!!

That's what happened recently on a Seminole (U-8) engine mag problem.



On an engine run-up there was a 150 RPM drop. This was followed by a normal reading and then a 300 RPM drop.

About that time a lanky, windy-type barnstormer happened along and he naturally shuffled up to a group of mechanics huddled around the ailing bird.



Well, you could have bowled 'em over with a feather. There it was—drip . . . drip . . . drip!

The crewchief couldn't change the seal but he sure got fast service from direct support. Listing the bum seal on the DA Form 2407 maintenance request saved a lot of time and elbow grease.

DON'T LET A SICK BIRD BUG YOU . . .

BE IN THE KNOW'

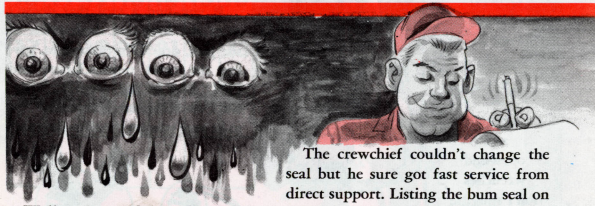
One of the rewards of troubleshooting a down-in-the-mouth bird engine step-by-step is the feeling of success when you finally locate the problem.

But did you ever go thru the whole ignition and carburetion bit and still not come up with the answer? What a revoltin' development!!

That's what happened recently on a Seminole (U-8) engine mag problem.

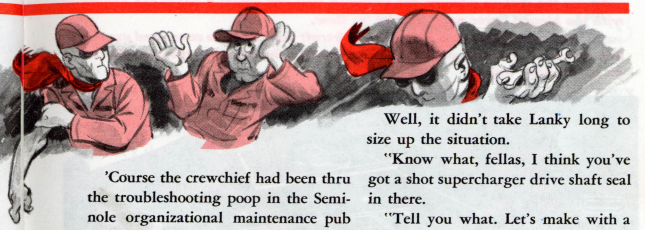
On an engine run-up there was a 150 RPM drop. This was followed by a normal reading and then a 300 RPM drop.

About that time a lanky, windy-type barnstormer happened along and he naturally shuffled up to a group of mechanics huddled around the ailing bird.



Well, you could have bowled 'em over with a feather. There it was—drip . . . drip . . . drip!

The crewchief couldn't change the seal but he sure got fast service from direct support. Listing the bum seal on the DA Form 2407 maintenance request saved a lot of time and elbow grease.

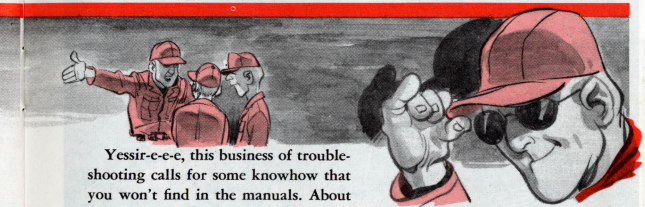


'Course the crewchief had been thru the troubleshooting poop in the Seminole organizational maintenance pub—forward and backward—so he was about ready to listen to anybody with a new idea.

Well, it didn't take Lanky long to size up the situation.

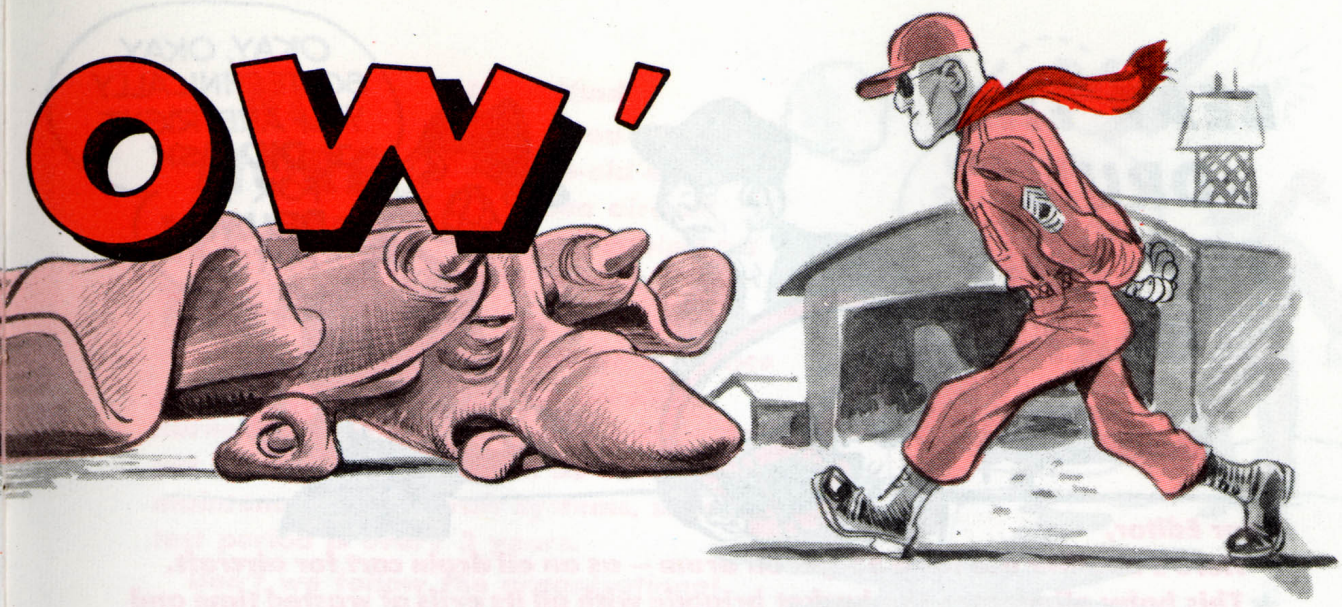
"Know what, fellas, I think you've got a shot supercharger drive shaft seal in there.

"Tell you what. Let's make with a wrench on the supercharger fuel drain cover. If there's oil on the inside of the cover—it's the seal."



Yessir-e-e-e, this business of troubleshooting calls for some knowhow that you won't find in the manuals. About the only way you can be in "the know" is to talk over your problem with other mechanics.

You're bound to find a Windy type in **your** group who can put his finger on the trouble . . . sure as shootin'.

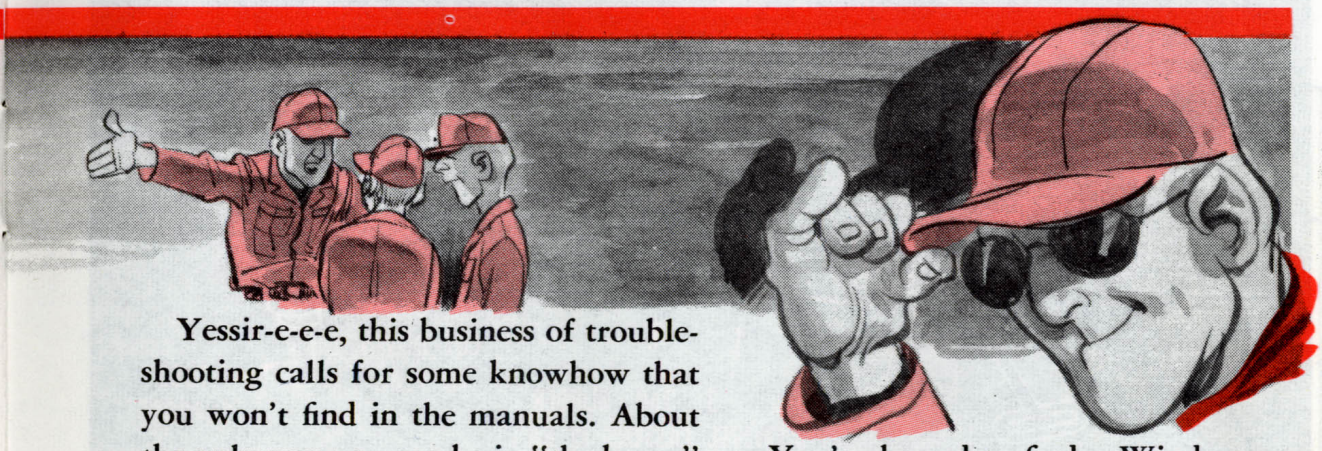


'Course the crewchief had been thru the troubleshooting poop in the Seminole organizational maintenance pub —forward and backward—so he was about ready to listen to anybody with a new idea.

Well, it didn't take Lanky long to size up the situation.

"Know what, fellas, I think you've got a shot supercharger drive shaft seal in there.

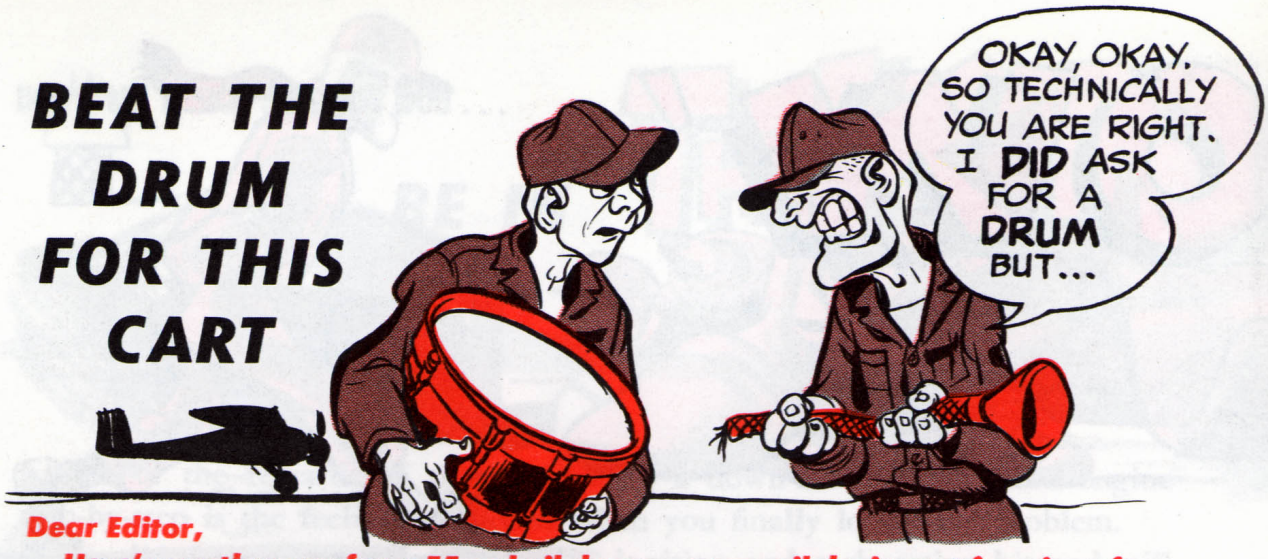
"Tell you what. Let's make with a wrench on the supercharger fuel drain cover. If there's oil on the inside of the cover—it's the seal."



Yessir-e-e-e, this business of troubleshooting calls for some knowhow that you won't find in the manuals. About the only way you can be in "the know" is to talk over your problem with other mechanics.

You're bound to find a Windy type in your group who can put his finger on the trouble . . . sure as shootin'.

BEAT THE DRUM FOR THIS CART



Dear Editor,

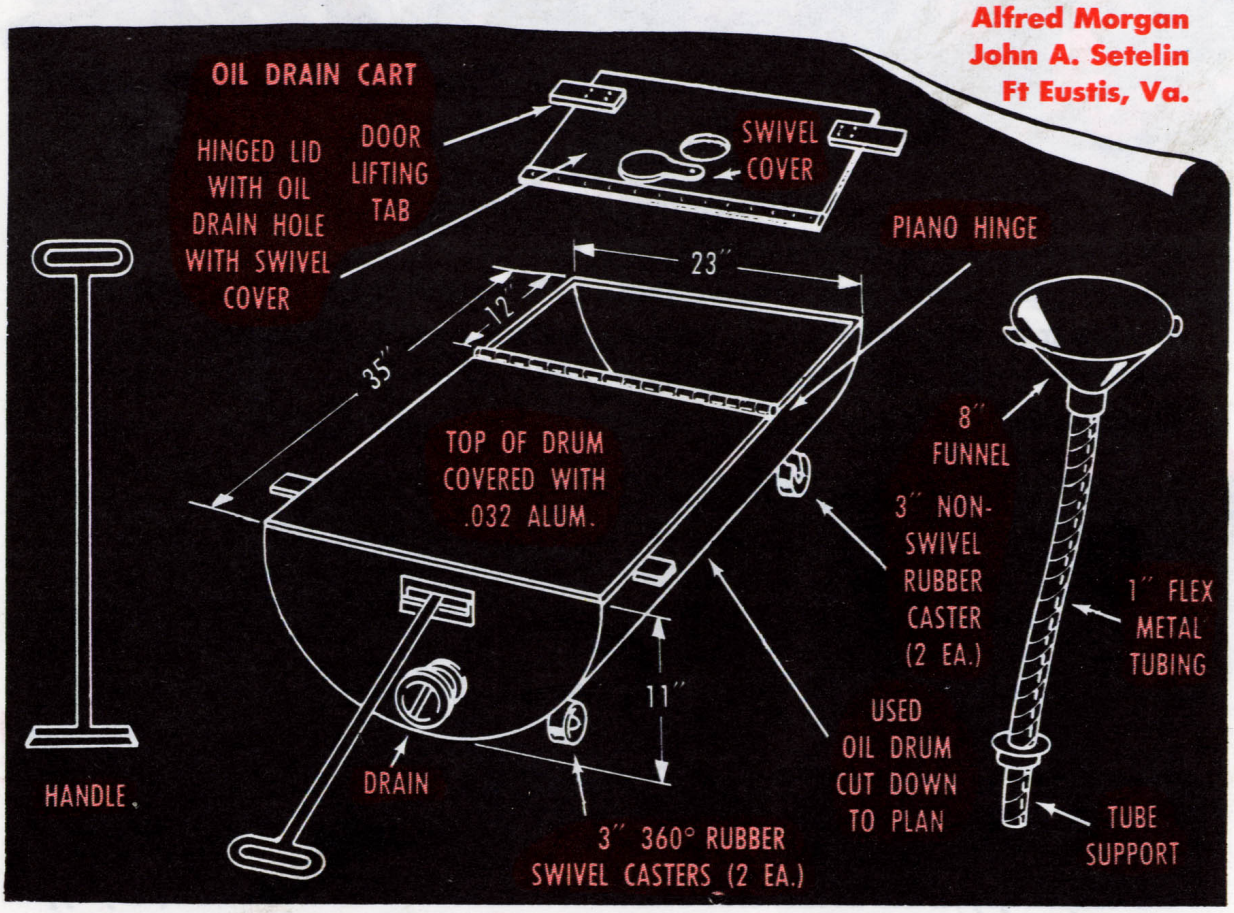
Here's another use for a 55-gal oil drum — as an oil drain cart for aircraft.

This baby eliminates the bucket brigade with all its evils of wasted time and elbow grease and the hazard caused by spilled oil.

To use the cart on a Sioux, for example, you just wheel it under the engine with the hinged cover open and let 'er flow.

On bigger choppers and fixed wing aircraft you close the cover and use the 8-in funnel to drain the oil. You can even safety the funnel to the aircraft and go on to other chores.

Alfred Morgan
John A. Setelin
Ft Eustis, Va.



(Ed Note—Righto. Just be sure the cover is closed and the cart is drained after each use to avoid any possible fire hazard.)

NO MORE WEIGHT TESTING

Dear Windy,

Can you settle the age-old dispute on when aircraft restraint equipment gets tested?

Our individual aircraft maintenance pub says to weight-test the shoulder harness and safety belt every year — and yet Ch 4 (22 Jul 64) to TM 55-405-3, on maintenance of aircraft systems, says the test period is every 3 years.

Don't we follow the organizational maintenance pub?

SP6 R. O. P.

Dear Specialist R. O. P.,

Yes indeed — you do follow the pub for your bird . . . except when a TWX gives new poop.

For economic and logistic reasons there won't be any more weight testing. That's the scoop in message SMOSM-EGCG-7-1394 (20 Jul 66).

You eye the restraint equipment on every Periodic for signs of wear, cuts, deterioration, fraying, broken stitches, loose bolts and improper attachment. If the equipment is shot, you replace it.

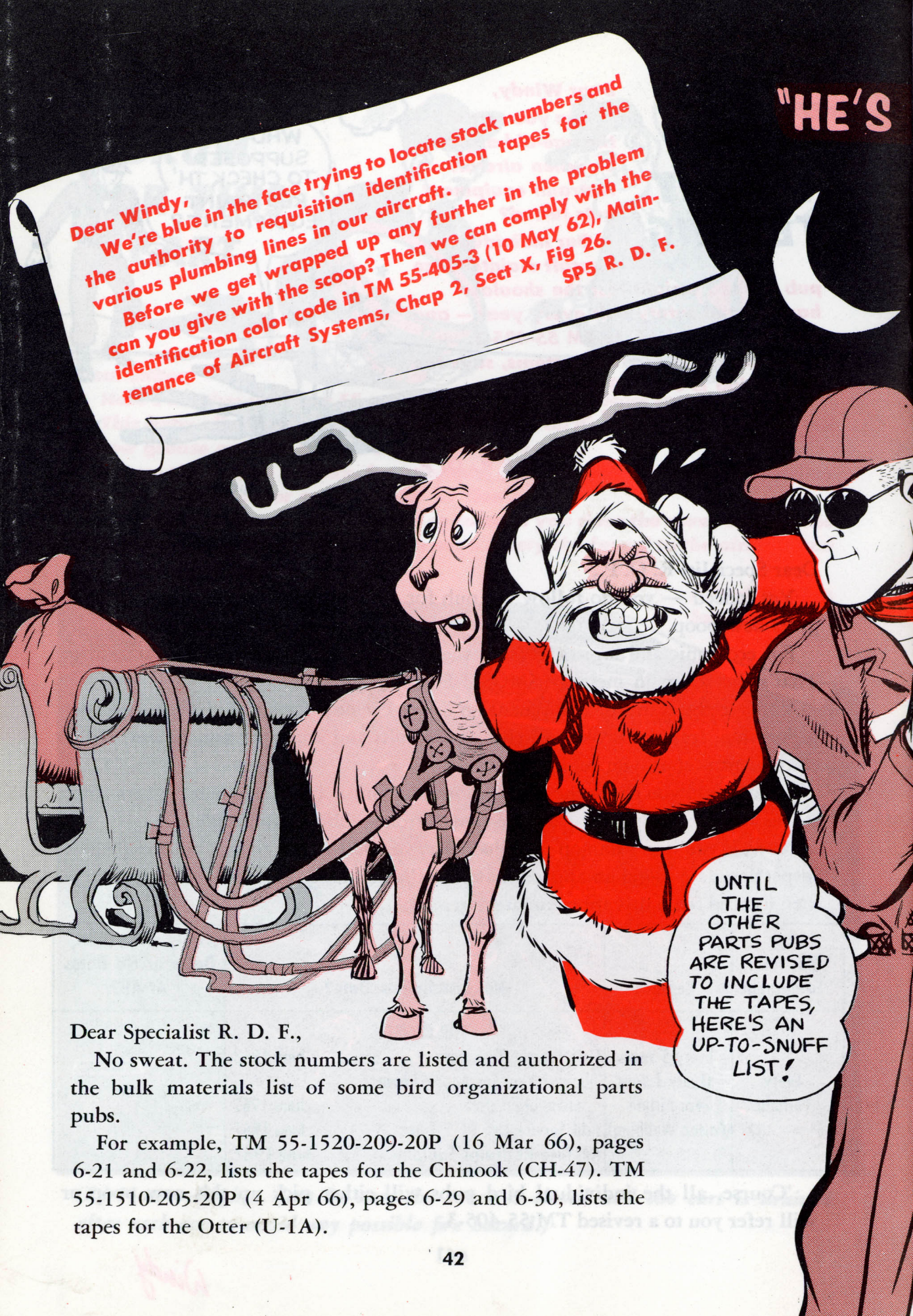
In addition, you check the installation date and if it's more than 5 years since it was installed (1 year for airline-type cotton webbing) you replace it.

Now, if you don't find an installed date, you add 1 year to the first weight test inspection date to get an approximate installation date. The 5 year service life is then figured from this approximate date.

Eye Restraint Equipment	Replace	No Installation Date?	Only Inspection Dates or No Dates At All?
Every Periodic	Every 5 Years (Every 1 Year For Airline Cotton Webbing)	FOR EXAMPLE: First Weight Test Date ..... June 1963 Allow 1 Year For Approximate Installation Date ..... June 1962 Add Service Life Of 5 Years ..... June 1967 **Replace Restraint Equipment ..... June 1967**	5 Years

'Course, all the individual bird pubs will either pick up this new poop or will refer you to a revised TM 55-405-3.

Windy



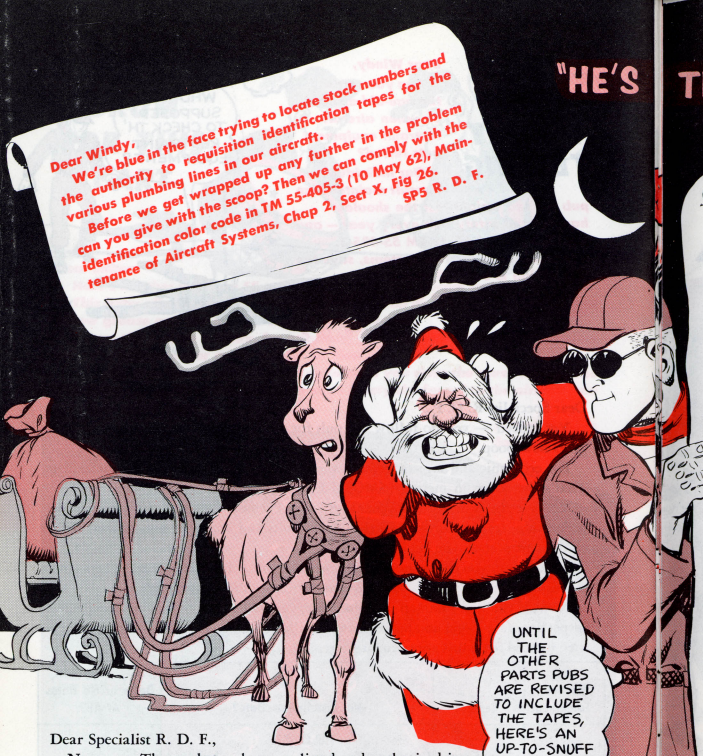
Dear Specialist R. D. F.,

No sweat. The stock numbers are listed and authorized in the bulk materials list of some bird organizational parts pubs.

For example, TM 55-1520-209-20P (16 Mar 66), pages 6-21 and 6-22, lists the tapes for the Chinook (CH-47). TM 55-1510-205-20P (4 Apr 66), pages 6-29 and 6-30, lists the tapes for the Otter (U-1A).

"HE'S TRUE BLUE..."

Dear Windy,
We're blue in the face trying to locate stock numbers and the authority to requisition identification tapes for the various plumbing lines in our aircraft.
Before we get wrapped up any further in the problem can you give with the scoop? Then we can comply with the identification color code in TM 55-405-3 (10 May 62), Maintenance of Aircraft Systems, Chap 2, Sect X, Fig 26.
SP5 R. D. F.



Dear Specialist R. D. F.,

No sweat. The stock numbers are listed and authorized in the bulk materials list of some bird organizational parts pubs.

For example, TM 55-1520-209-20P (16 Mar 66), pages 6-21 and 6-22, lists the tapes for the Chinook (CH-47). TM 55-1510-205-20P (4 Apr 66), pages 6-29 and 6-30, lists the tapes for the Otter (U-1A).

FSN	USE FOR
7510-753-4734	Pneumatic
7510-753-4727	Hydraulic
7510-582-7688	Fire Extinguisher
7510-753-4735	Electrical Conduit
7510-753-4730	Breathing Oxygen
7510-753-4733	De-Icing
7510-753-4742	Instrument Air
7510-753-4736	Compressed Gas
7510-753-4728	Fuel
7510-753-4741	Lubrication (Oil)
7510-579-8724	Fuel Drain
7510-579-8832	Fuel Press
7510-584-0213	Fuel Transfer
7510-579-8831	Fuel Vent
7510-582-0635	Cabin Heat
7510-582-0627	Oxygen Filler
7510-579-8938	Hyd Brake L. H.
7510-579-8939	Hyd Brake R. H.
7510-582-7686	Instrument Air Drain
7510-579-8841	Manifold Press
7510-579-8829	Pitot Press
7510-582-0595	Emergency Air Supply
7510-582-8038	Hydraulic L. G. up
7510-582-8029	Hydraulic L. G. down

Windy

CONDITIONER PROBLEM — SOLUTION

Dear Windy,
TM 55-405-3 (10 May 62) and some aircraft -20's list chrome pickle solution to condition magnesium parts as MIL-M-3171, Type I, but I can't find the FSN in supply pubs.
Do you have the solution?

SFC R. L. P.

Dear Sergeant R. L. P.,

Fed Cat C6800-IL (1 Jan 66) lists MIL-M-3171, Type I on page 4.62. The catalog describes composition of the solution, its use and quantity. FSN 6850-577-4753 will get you the ingredients to make a gallon of the conditioner.

Windy

TRUE BLUE..."

FSN	USE FOR
7510-753-4734	Pneumatic
7510-753-4727	Hydraulic
7510-582-7688	Fire Extinguisher
7510-753-4735	Electrical Conduit
7510-753-4730	Breathing Oxygen
7510-753-4733	De-Icing
7510-753-4742	Instrument Air
7510-753-4736	Compressed Gas
7510-753-4728	Fuel
7510-753-4741	Lubrication (Oil)
7510-579-8724	Fuel Drain
7510-579-8832	Fuel Press
7510-584-0213	Fuel Transfer
7510-579-8831	Fuel Vent
7510-582-0635	Cabin Heat
7510-582-0627	Oxygen Filler
7510-579-8938	Hyd Brake L. H.
7510-579-8939	Hyd Brake R. H.
7510-582-7686	Instrument Air Drain
7510-579-8841	Manifold Press
7510-579-8829	Pitot Press
7510-582-0595	Emergency Air Supply
7510-582-8038	Hydraulic L. G. up
7510-582-8029	Hydraulic L. G. down

Windy

CONDITIONER PROBLEM — SOLUTION

Dear Windy,

TM 55-405-3 (10 May 62) and some aircraft -20's list chrome pickle solution to condition magnesium parts as MIL-M-3171, Type I, but I can't find the FSN in supply pubs.

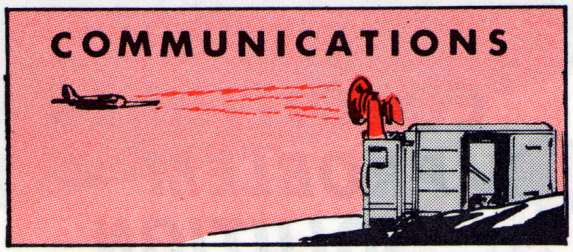
Do you have the solution?

SFC R. L. P.

Dear Sergeant R. L. P.,

Fed Cat C6800-IL (1 Jan 66) lists MIL-M-3171, Type I on page 4.62. The catalog describes composition of the solution, its use and quantity. FSN 6850-577-4753 will get you the ingredients to make a gallon of the conditioner.

Windy



AN/MPQ-29 . . . READ YOUR LOUD 'N'

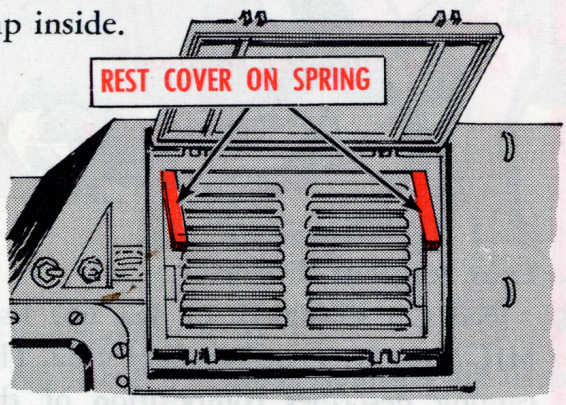
Whether you're soppin' wet from a heavy rain or chatterin' in a frigid field, throw on the heat switch first and wait 30 minutes before pushing the power into your AN/MPQ-29 radar set.

Trying to hurry up operations of that aircraft and drone tracking system could leave you with thrown circuit breakers or damaged tubes.

The worst enemy that set has, though, is condensation. So, here's a couple of cues to help beat that enemy on its own ground—

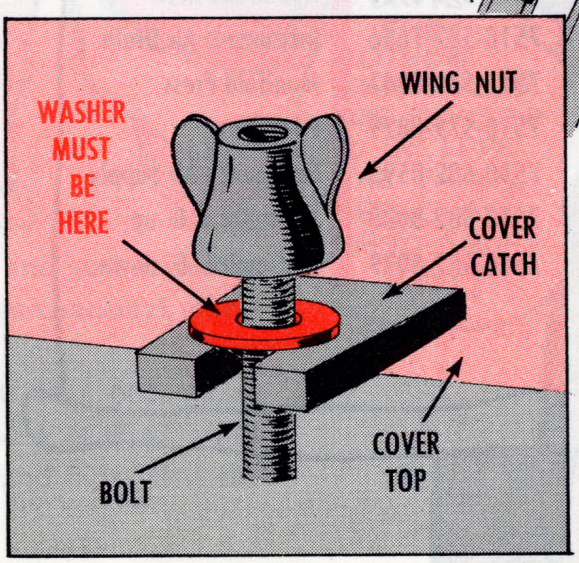
Fire up the radar set for an hour every day even if you're not planning to operate 'er. This'll help cut corrosion and eliminate leakage paths that could short out the set.

And, always open the ventilating ports when the set's in use. Then, leave them open for 30 minutes after shutting down the set or condensation will build up inside.



Another little point on the vents . . .

When you're battenin' down the ventilating-port cover put the washer between the wingnut and the catch on the cover. If the washer winds up under the cover and pressure's put on the



AN/MPQ-29 . . . READ YOUR LOUD 'N' BLIPS CLEAR

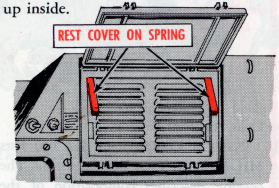
Whether you're soppin' wet from a heavy rain or chatterin' in a frigid field, throw on the heat switch first and wait 30 minutes before pushing the power into your AN/MPQ-29 radar set.

Trying to hurry up operations of that aircraft and drone tracking system could leave you with thrown circuit breakers or damaged tubes.

The worst enemy that set has, though, is condensation. So, here's a couple of cues to help beat that enemy on its own ground—

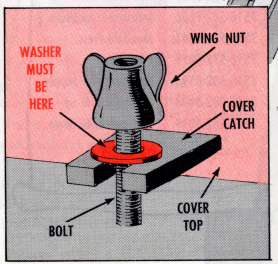
Fire up the radar set for an hour every day even if you're not planning to operate 'er. This'll help cut corrosion and eliminate leakage paths that could short out the set.

And, always open the ventilating ports when the set's in use. Then, leave them open for 30 minutes after shutting down the set or condensation will build up inside.



Another little point on the vents . . .

When you're battenin' down the ventilating-port cover put the washer between the wingnut and the catch on the cover. If the washer winds up under the cover and pressure's put on the wingnut, the catch gets cracked or broken which lets moisture into the radar set cabinet.

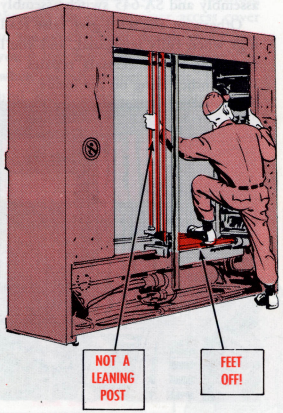


Incidentally, clean the vent air filters like it says on page 115 in TM 11-5840-220-10 (Apr 60).

PT-446, -474 PLOTTING BOARDS

The X-drive (horizontal) and Y-drive (vertical) guide rods on the PT-446, -474 plotting boards are sturdy, but they're not supports to help you throw your weight around. Put a lot of pressure on either one and you could bend or break it and make plotting impossible.

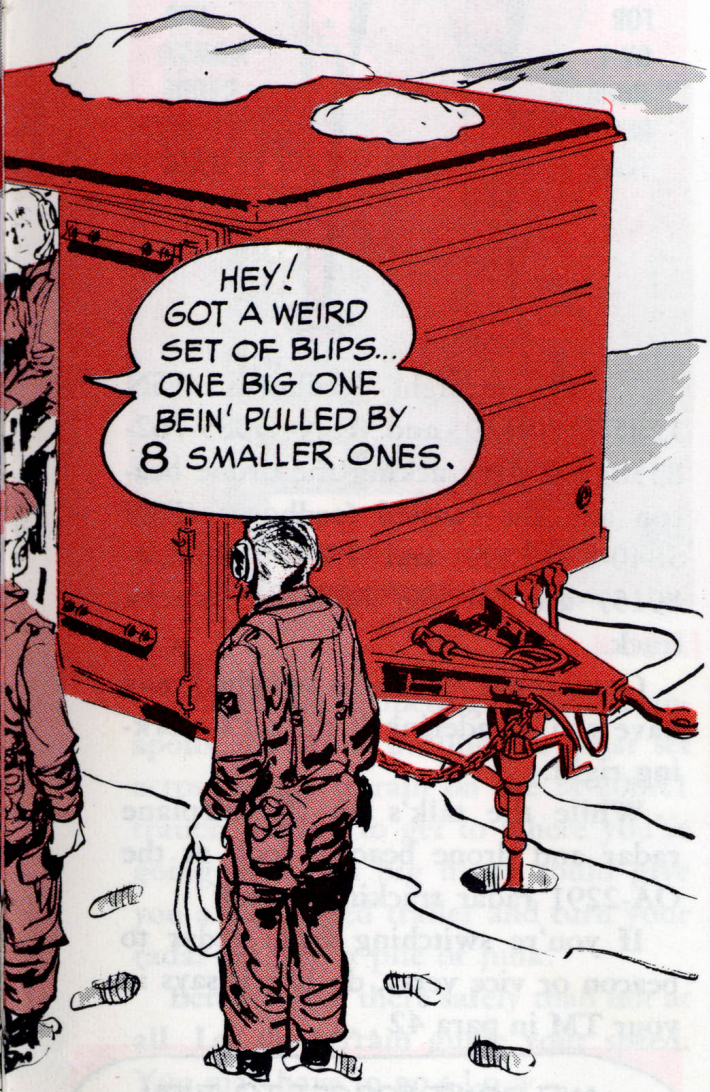
When the Y-drive guide rod has to be moved manually, grab it by the carriage.



Also, in cleaning the vertical or horizontal rod, be sure there's no grit or particles left hanging around. Clogged ball bushings'll give you puzzled patterns on your plotting paper.

MORE

BLIPS CLEAR



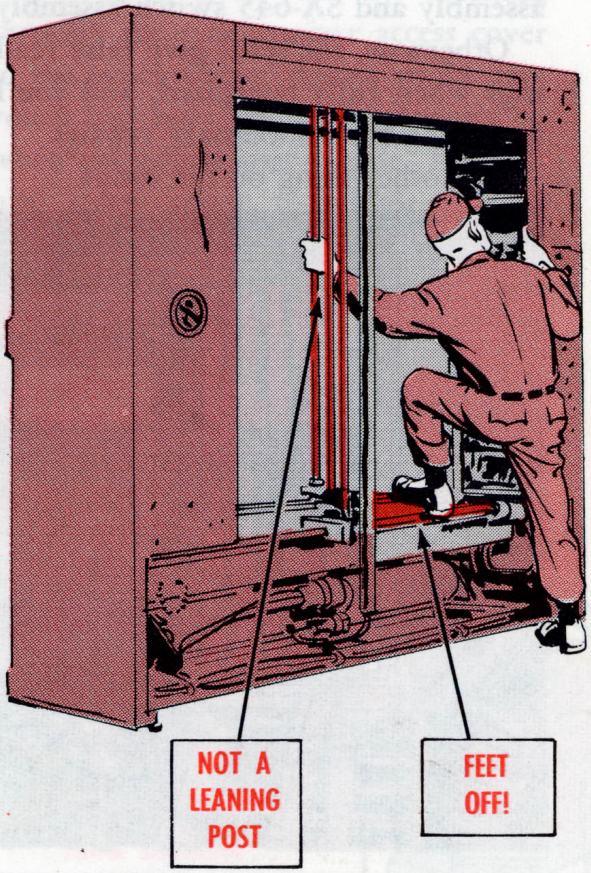
wingnut, the catch gets cracked or broken which lets moisture into the radar set cabinet.

Incidentally, clean the vent air filters like it says on page 115 in TM 11-5840-220-10 (Apr 60).

PT-446, -474 PLOTTING BOARDS

The X-drive (horizontal) and Y-drive (vertical) guide rods on the PT-446, -474 plotting boards are sturdy, but they're not supports to help you throw your weight around. Put a lot of pressure on either one and you could bend or break it and make plotting impossible.

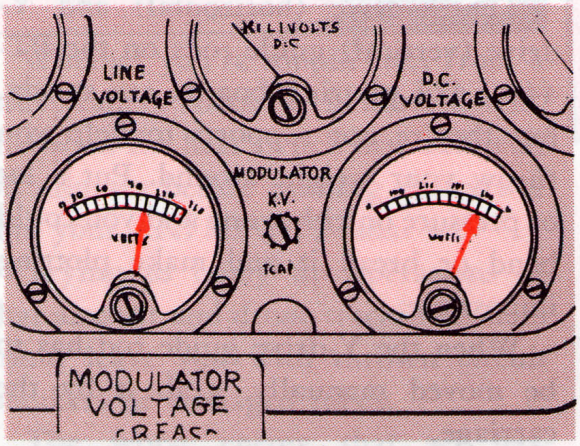
When the Y-drive guide rod has to be moved manually, grab it by the carriage.



Also, in cleaning the vertical or horizontal rod, be sure there's no grit or particles left hanging around. Clogged ball bushings'll give you puzzled patterns on your plotting paper.

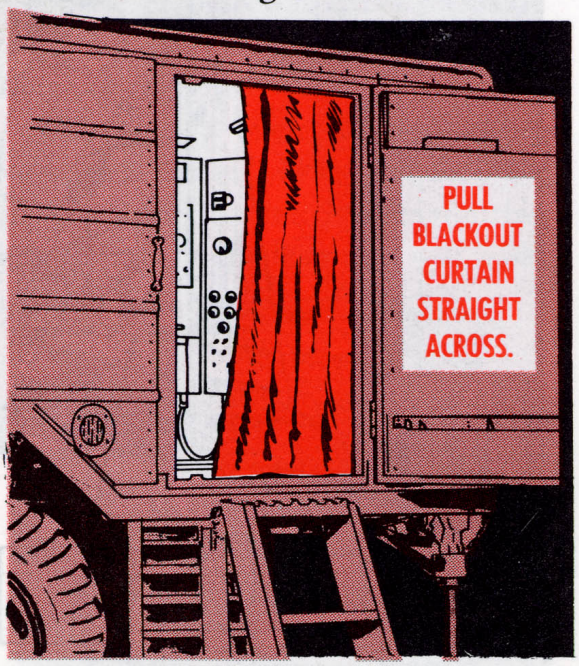
PS MORE

After setting your DC voltage at 400 volts, make sure the line voltage is at a top input of 115-120 volts as indicated on the ME-168 electrical meter assembly and SA-645 switch assembly.



Otherwise, the set'll give false readings when fully energized, and you'll be calling for unnecessary repairs.

One other thing on the inside.



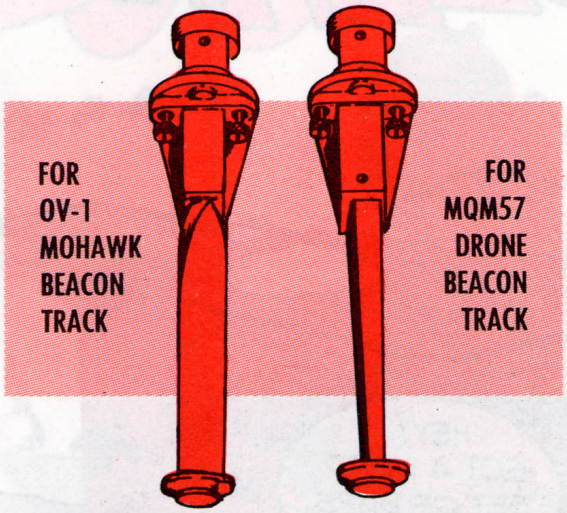
Use care in closing the blackout curtain. Just pull it straight across. Pulling it downward and around'll tear the holding eyes out of the curtain, making it hard on your eyes for watching the scope.

AS-1006 ANTENNA ASSEMBLY

Now, a look at the AS-1006 antenna assembly.

Make sure you have the right feedhorn in the scanner for the mission.

Remember . . .

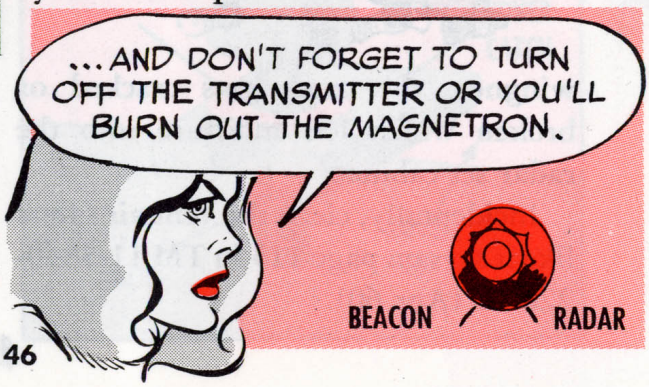


. . . The straight feedhorns (FSN 1285-762-8349 and FSN 5985-762-8350) are for tracking the drone beacon and the twisted feedhorns (FSN 5840-878-7299 and FSN 5840-878-8915) are for the Mohawk beacon track.

Getting the feedhorns switched may have you wondering if the set's working right.

While the talk's on the airplane radar and drone beacon, look at the OA-2291 radar tracking group.

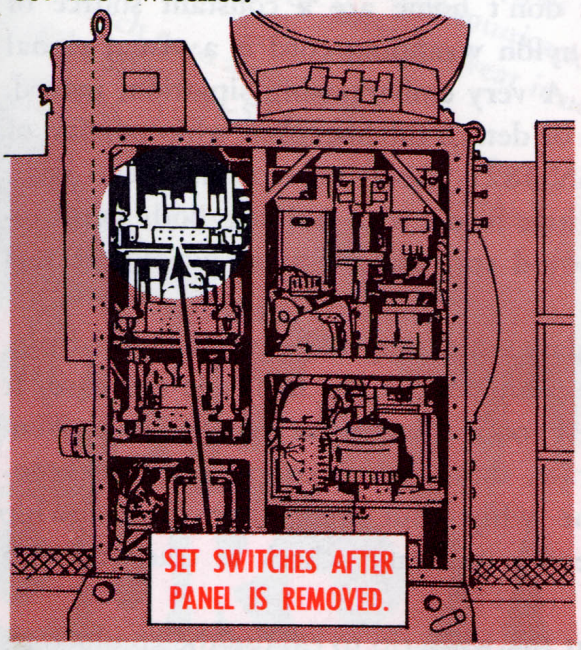
If you're switching from radar to beacon or vice versa, do like it says in your TM in para 42 . . .

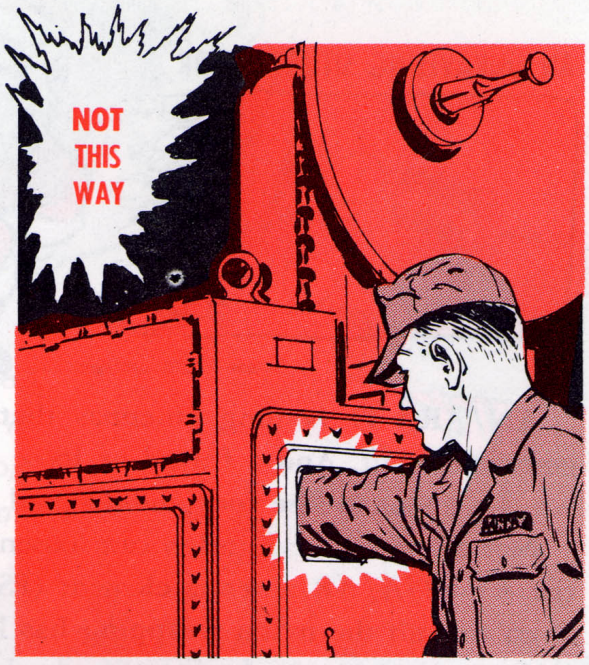


SN-242 ASSEMBLY

Here's a bitter pill to take for setting the SN-242 electrical synchronizer beacon pulse delay switch (S1060) and low altitude delay switch (S1150).

You must loosen the 50 captive screws of the cabinet, remove the panel and pull out the SN-242 drawer and set the switches.





Taking a short cut by reaching through the synchronizer access cover to the synchronizer chassis could give you a bad burn, since the power's on when the adjustment's made. The natural reflex action to withdraw your arm fast could add to your injury with severe cuts from the nomenclature plate.

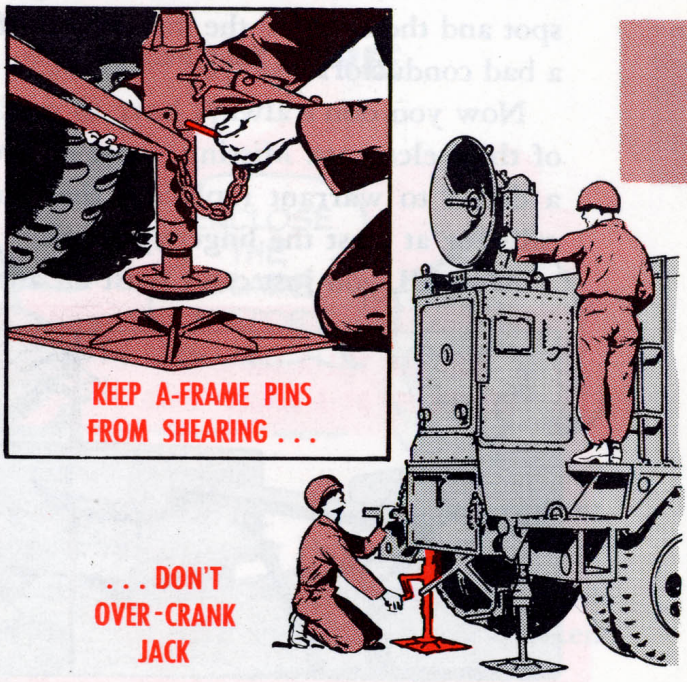
M 200A1 TRAILER

You're not competing in the Indianapolis 500 while pulling the radar set across rough terrain on the M-200A1 trailer. Trying to get to where you're going in a real big hurry could give you a jackknifed trailer and turn your radar set into a pile of junk.

Better to get there safely than not at all. Let the terrain guide your speed. You may have to go s-l-o-w.

And, when you stop to set up shop, don't over-crank the leveling jacks. It will put all the trailer's weight on the jacks and shear the A-frame pins.

Then, the jacks'll spraddle and won't be much good for leveling the MPQ-29.



END

AN UNRAVELING SITUATION OR . . .

NEVER TRUST A FRAY

AN/ARA-31 homing antennas that don't home are a constant source of embarrassment. And a frayed or loose nylon wrapping cord is a visual signal you are about to lose your audio signal. A very embarrassing situation, indeed.

Normal aircraft vibration can loosen or detach the fiberglass whip portion of the AT-624A/AR antenna element (FSN 5821-552-0500) from its metal base. Even though the nylon wrapping has little to do with holding both parts together, any loose or frayed strands should still make you suspicious of real trouble.

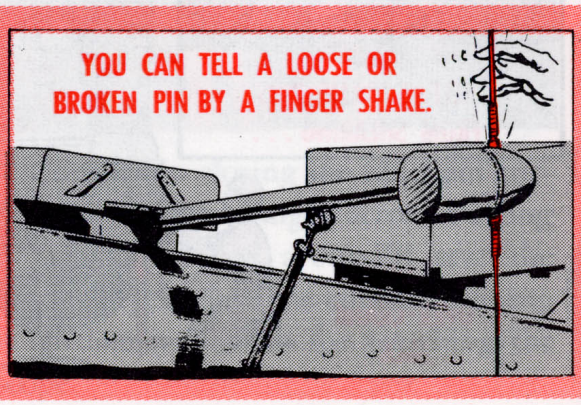
Because what really keeps the fiberglass whip snug is its metal tapered pin, which expands the butt portion of the whip for a tight fit inside the base. It only takes a simple fingertip shake to tell you if this pin has loosened or broken.

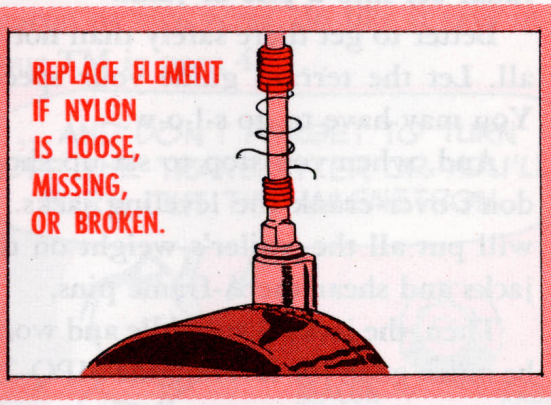
What really makes the element operate, though, is a copperweld type conductor embedded in the center of the whip. But since there are 4 whip antennas in this homing group, you need a continuity check to track down a busted conductor.

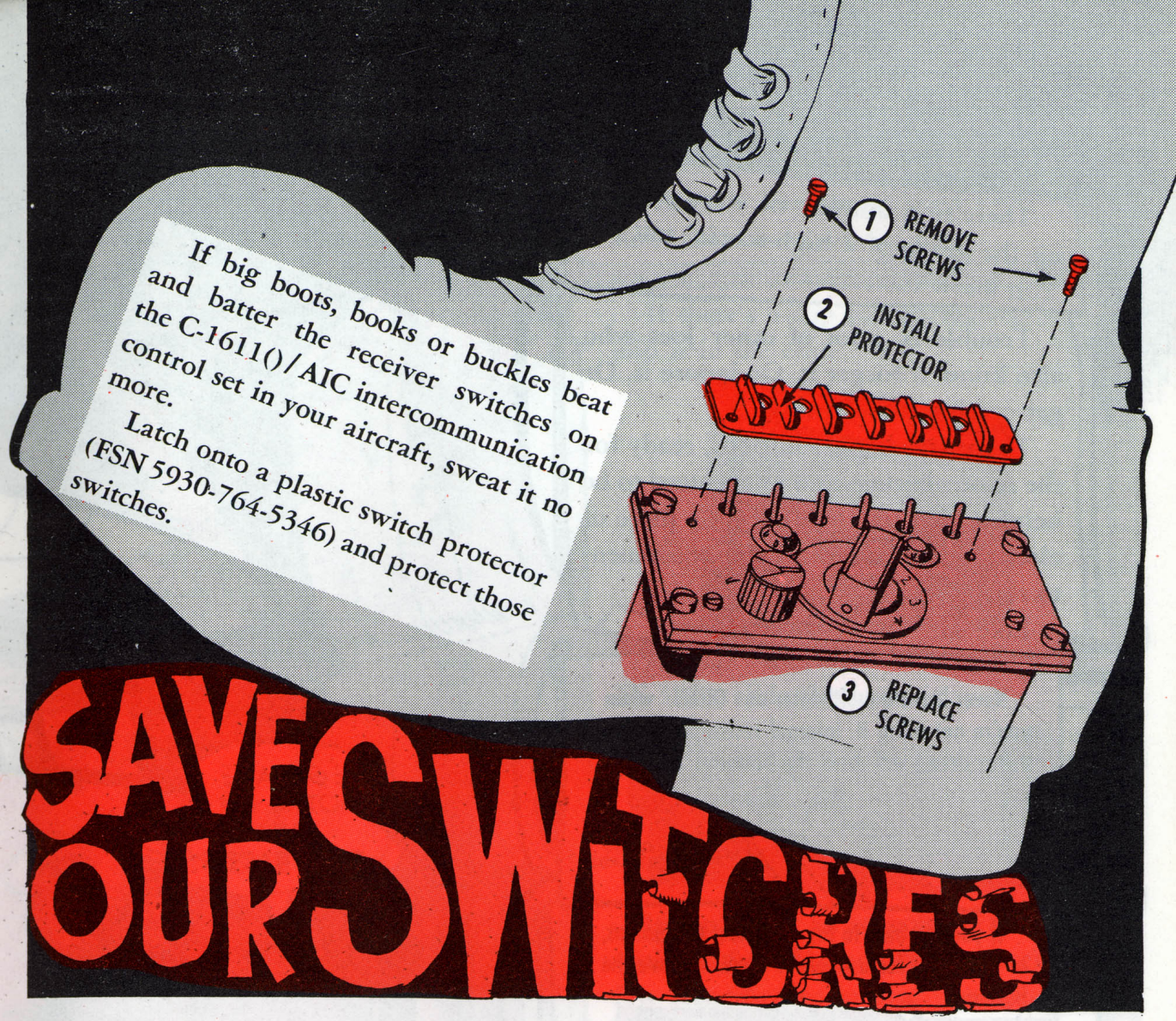
All you need do is remove the paint at the whip tip to expose the conductor's bare end. Then reach for a low range ohmmeter, touching one lead to the bare spot and the other to the metal base. If you can measure any resistance you have a bad conductor.

Now you don't always have to make this continuity check before tossing one of these elements. Missing, loose or broken nylon wrapping cord is enough of a defect to warrant replacing that antenna element. And even a frayed cord calls for at least the fingertip check.

After all, you just can't trust an antenna that's lost its homing instinct.





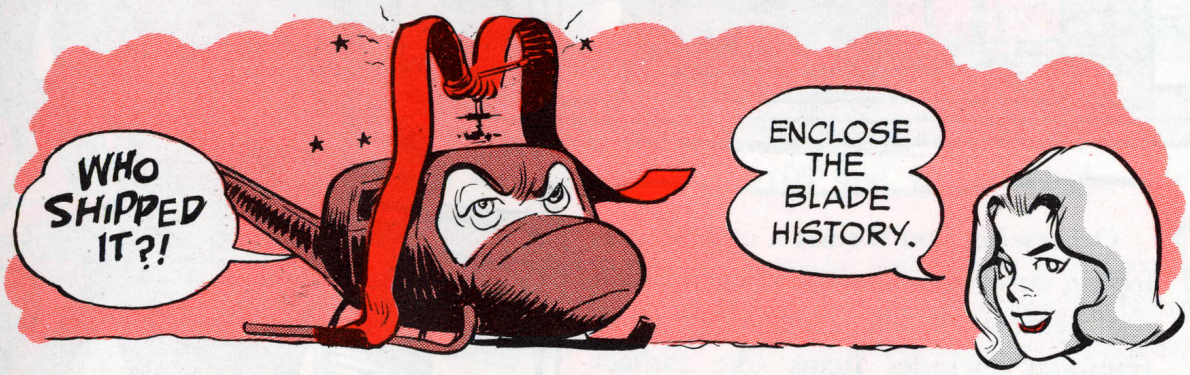


If big boots, books or buckles beat and batter the receiver switches on the C-1611()/AIC intercommunication control set in your aircraft, sweat it no more.

Latch onto a plastic switch protector (FSN 5930-764-5346) and protect those switches.

SAVE OUR SWITCHES

SHIP 'EM SHIPSHAPE



Hold one before you pack up that Huey (UH-1 A,B,D) main rotor blade! You don't want to ship scrap, right? So, be sure you eye your Bird's organizational maintenance pub to get the non-repairable limits. And the shipping preparation poop. Just be sure you enclose a DA Form 2410 with the blade history, taken from the DA Form 2408-16, sure 'nuff.

HOW TO UPGRADE

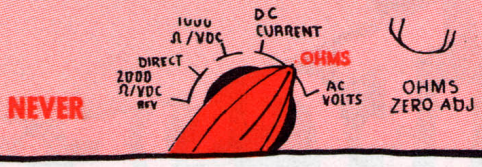
There're a number of ways to keep up the grade of a high-scorin' test set. You know it.

Trouble is, a lot of other Joes who also know it forget it. Or ignore it. Or get careless about it.

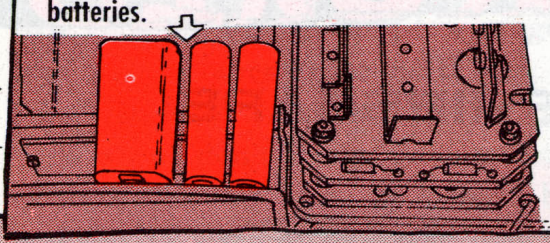
There are simple solutions, ready for the remembering, and guaranteed to be helpful next time you've got a piece of electronics-communication equipment to test.

Like so:

Never leave a multimeter on OHMS when you're not using it. Internal resistance of the meter circuit will drain the batteries . . . fast.

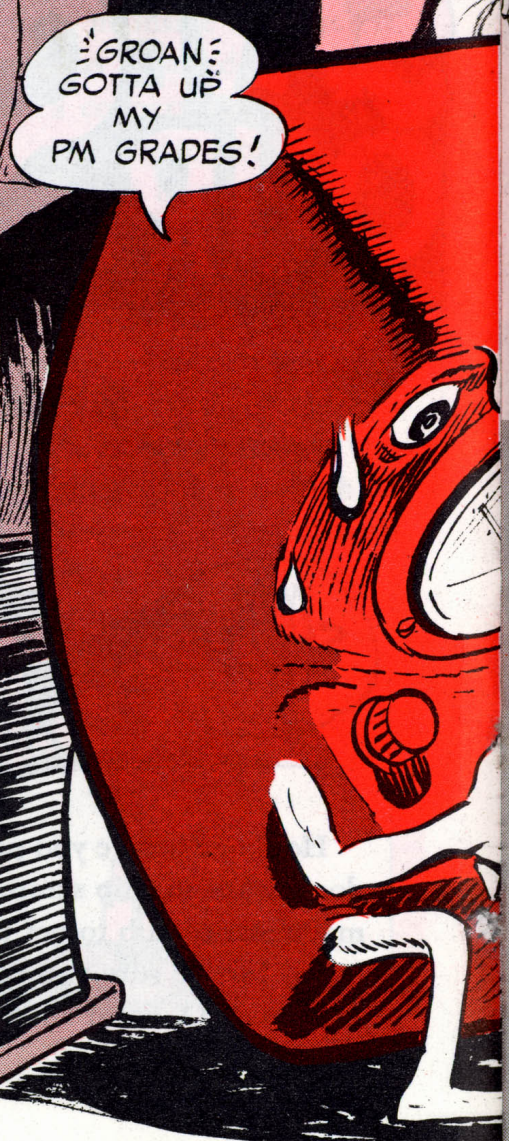


If you're going to lay aside test equipment, or not use it for a week or more, remove the batteries.



Otherwise, you'll start a case of galloping corrosion that could even mean replacement of the equipment (that reminder includes items like radiacmeters, power megaphones, radio control sets and other equipment which uses batteries).

'Nother point is unnecessary damage to test leads. The easy cure is to store



HOW TO UPGRADE A TEST SET

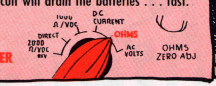
There're a number of ways to keep up the grade of a high-scorin' test set. You know it.

Trouble is, a lot of other Joes who also know it forget it. Or ignore it. Or get careless about it.

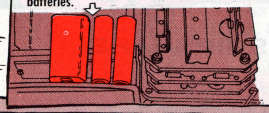
There are simple solutions, ready for the remembering, and guaranteed to be helpful next time you've got a piece of electronics-communication equipment to test.

Like so:

Never leave a multimeter on OHMS when you're not using it. Internal resistance of the meter circuit will drain the batteries . . . fast.



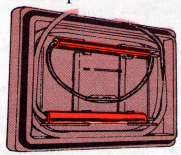
If you're going to lay aside test equipment, or not use it for a week or more, remove the batteries.



Otherwise, you'll start a case of galloping corrosion that could even mean replacement of the equipment (that reminder includes items like radiacmeters, power megaphones, radio control sets and other equipment which uses batteries).

'Nother point is unnecessary damage to test leads. The easy cure is to store the leads the way they were designed to be stored . . . which might even take an extra 5 seconds of your time. For sure, tho, it's worth it.

If there's a clip for storing the lead, slip it in the clip.

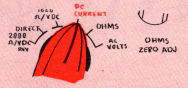


If there's a compartment (like in the TS-352), slide the leads in.

If you've got an economy type meter with neither clip nor compartment, a few seconds care in neatly storing the leads can pay off when you need 'em next time. Like, be careful not to pinch them with the cover.

Now, look at the biggest single cause of damage to the meter itself: Measuring on the wrong switch settings. Try it with sets like the URM-105 and you've bought a new multimeter.

F'rinstance, never, never measure volts when your switches are rigged for ohms. And, before you measure amperage, make sure your switches aren't set for voltage. You know, an ohm for an ohm, and a tooth for a tooth.



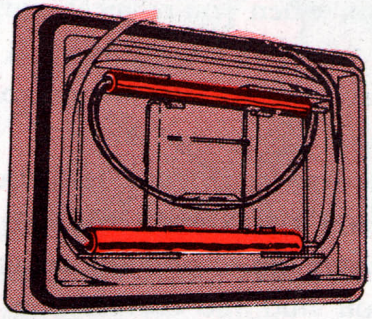
MEASURE AMPS ON DC CURRENT

MORE

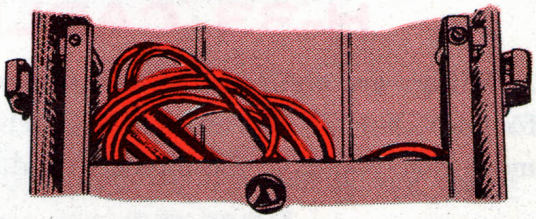
A TEST SET

the leads the way they were designed to be stored . . . which might even take an extra 5 seconds of your time. For sure, tho, it's worth it.

If there's a clip for storing the lead, slip it in the clip.



If there's a compartment (like in the TS-352), slide the leads in.

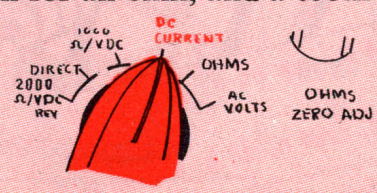


If you've got an economy type meter with neither clip nor compartment, a few seconds care in neatly storing the leads can pay off when you need 'em next time. Like, be careful not to pinch them with the cover.

HOW ABOUT SOME HELP FROM YOU USERS?

Now, look at the biggest single cause of damage to the meter itself: Measuring on the wrong switch settings. Try it with sets like the URM-105 and you've bought a new multimeter.

F'rinstance, never, never measure volts when your switches are rigged for ohms. And, before you measure amperage, make sure your switches aren't set for voltage. You know, an ohm for an ohm, and a tooth for a tooth.



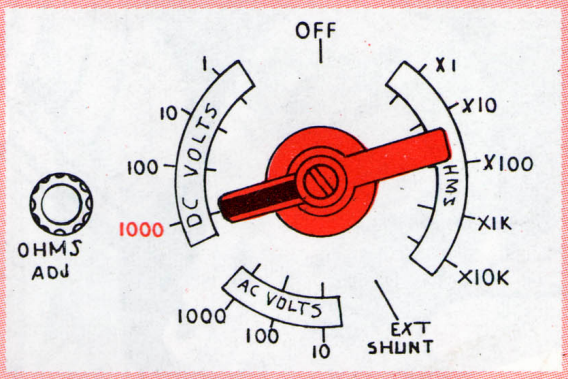
MEASURE AMPS ON DC CURRENT

PS MORE

Even though you are in the right alley, before touching a test probe to a piece of equipment be sure you're measurin' DC voltage on a DC setting; or, don't sock a potential 5,000 volts to a meter that's set to measure a maximum 1,000V.

Also, when you're measuring something you're not quite sure of, start at the high end of the meter and work down.

F'rinstance, if your test equipment measures a maximum voltage, start at the maximum setting and switch down till you find the correct one for the equipment you're testing. Taking a chance on a low setting, or not checking, will damage your test equipment as often as not.



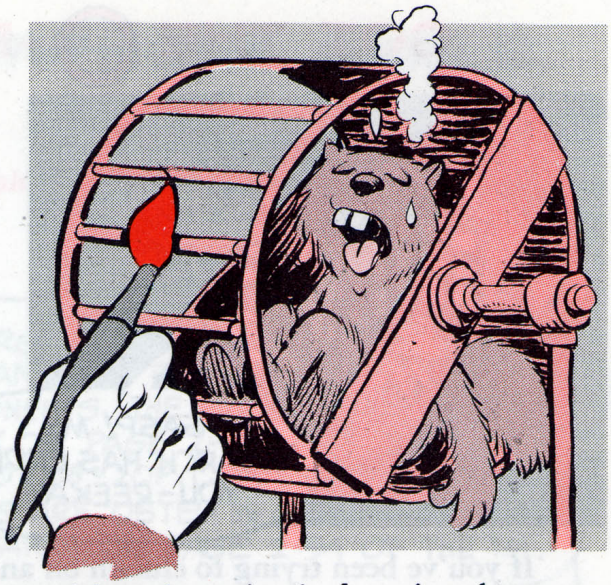
You can't throw 500 volts through a switch set to measure one volt and not have damage.

Like she said, it all depends on you.

H-33 CABLE SHORTAGE

Things are tight along the supply line. Production of the type wire needed for the CX-1574/U cables of your H-38/PT handset is necessarily slow, and the more care you give the handset cord, the longer you'll be communicating.

PAINT CAN FREEZE FAN



Yessirree! . . . a little ol' squirrel would have to move out to keep up with that 10,000-RPM blower motor on your RT-246 or RT-524 receiver-transmitter.

So, keep the odds in favor of the motor when you're touch up paintin' the case around the squirrel cage. A couple or three drops of paint can dry between the cage and case, keeping those cooling vanes from turning and doing their job of keeping the innards from overheating and burning out.

After the paint is dry give the cage a gentle flip with your finger to make sure the fan is free before puttin' power to the receiver-transmitter.

BOWL BELONGS

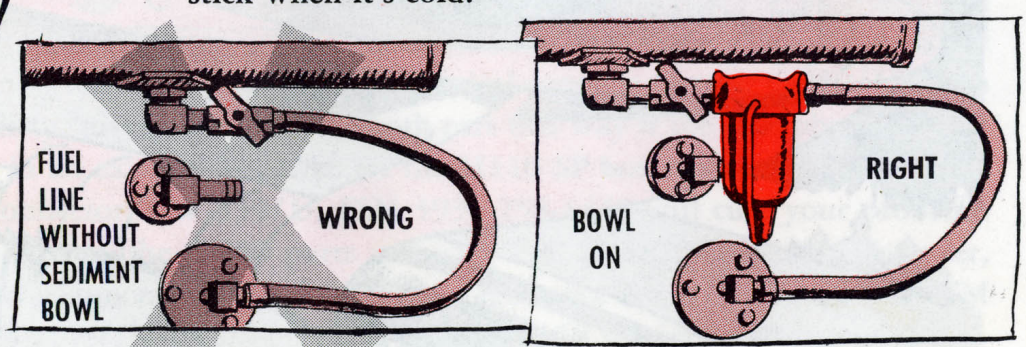
SEDIMENT SENTIMENT

SA-SA-SA-SOMEBODY SH-SH-SH-SHUT OFF THE HE-HE-HE-HEAT IN YOUR AN/GRC-46 ( ) RADIO TELETYPEWRITER SET'S S-144 TYPE SH-SH-SH-SHELTER?

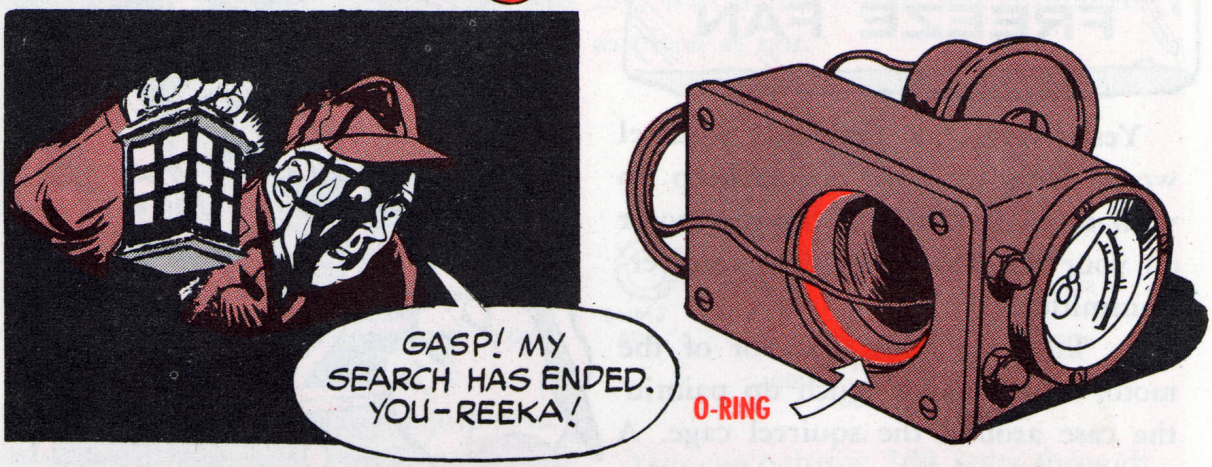
No? Then maybe you forgot to put back the gasoline filter (FSN 4520-670-4965) after cleaning it.

Without the filter or sediment bowl, moisture can collect in the fuel line, ice up and shut off the flow of fuel . . . or gook can gather and block the line.

Of course, some hot-blooded type may not need the heater anyway. But the equipment could be hurtin' for heat. Like f'rinstance, the keys on the teletypewriters'll stick when it's cold.



GOT THE O-RING BLUES?



If you've been trying to clue-in on an FSN for the battery compartment O-ring of the IM-174 radiacmeter, your search is ended.

Said O-ring, sometimes called gasket and other times called more colorful names, actually wears the title "Packing, Preformed."

You'll find it on page 3 of TM 11-6665-213-20P (Jul 63), under FSN 5330-752-7782.

COLD WEATHER TAPE

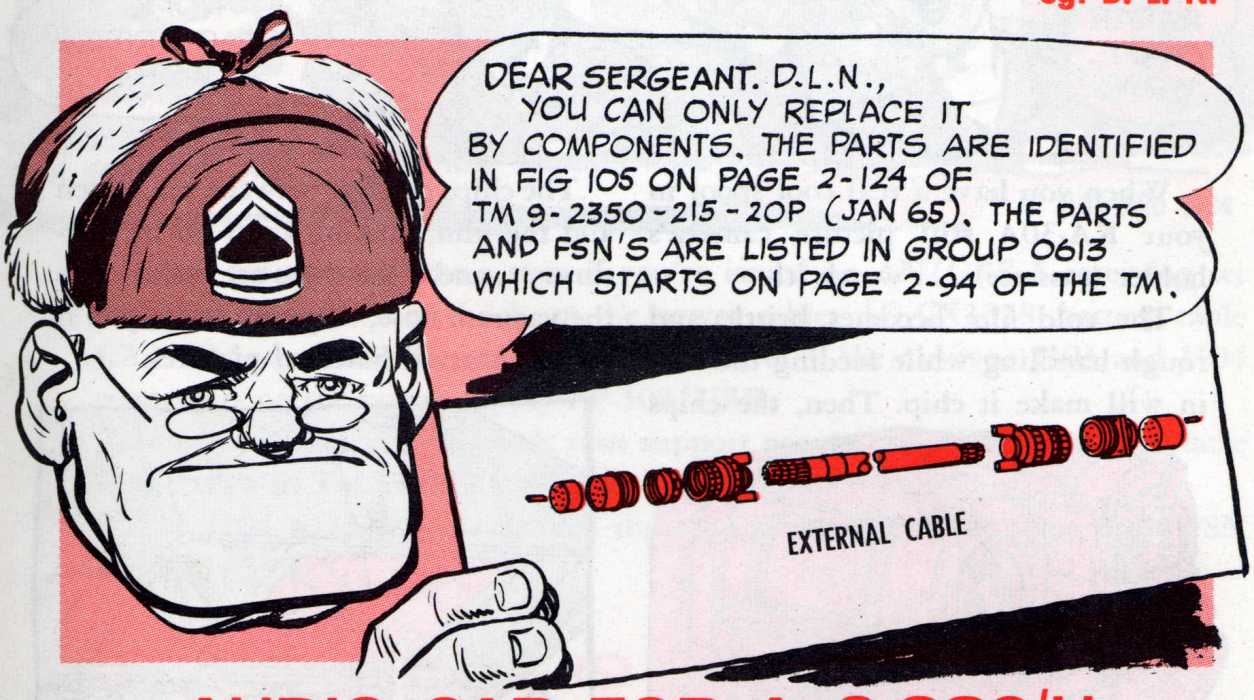
Say . . . next time you're mixing field wire splicing with frigid weather you'll make out better by binding the splice with TL-600/U Tape, Arctic, FSN 5970-240-0620. It's even better if you use friction tape for added protection. Naturally, in warm months or climate, you still use TL-636/U, FSN 5970-296-1175.

EXTERNAL INTERPHONE CABLE

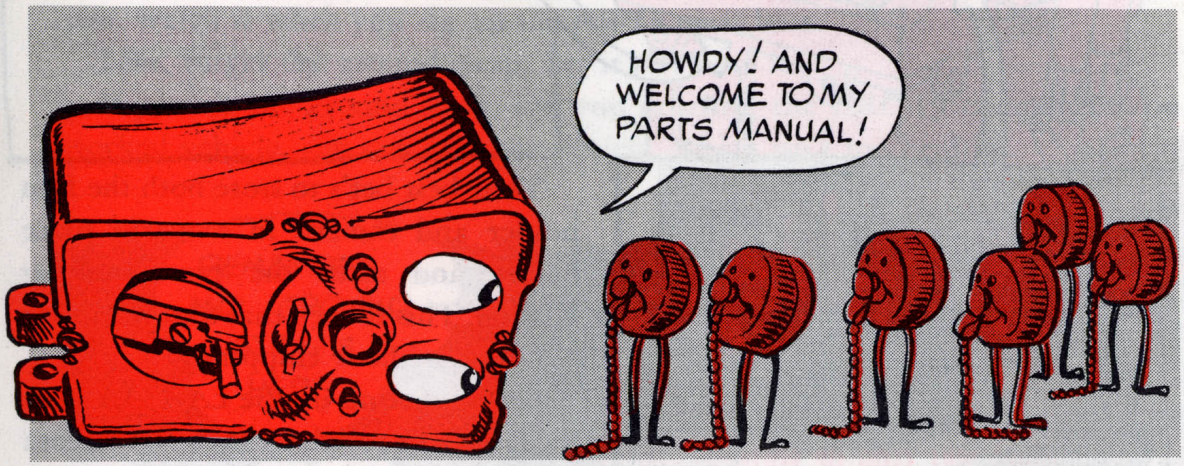
Dear Half-Mast,

How do we get the external interphone cable for the AN/VIA-1 intercom mounted in the M60A1 tank?

Sgt D. L. N.



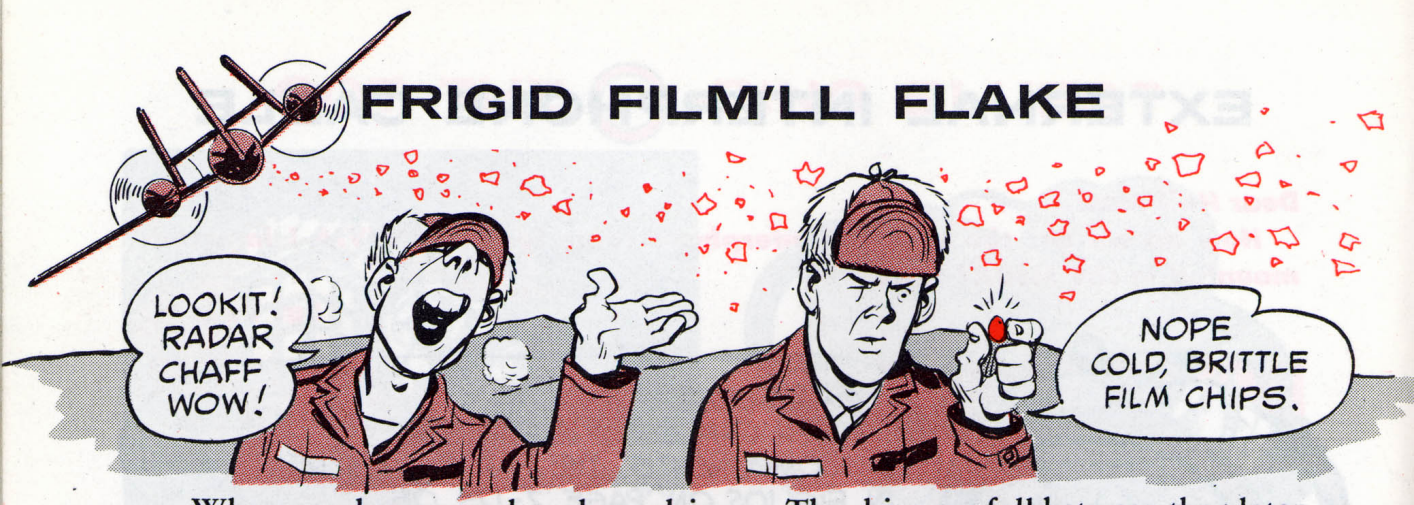
AUDIO CAP FOR A C-980/U



If dust and moisture are doing the electrical contacts of your C-980/U audio connector dirty, give a listen. Bend both ears this way if the interphone control is mounted in an exposed area like on the M110 SP howitzer.

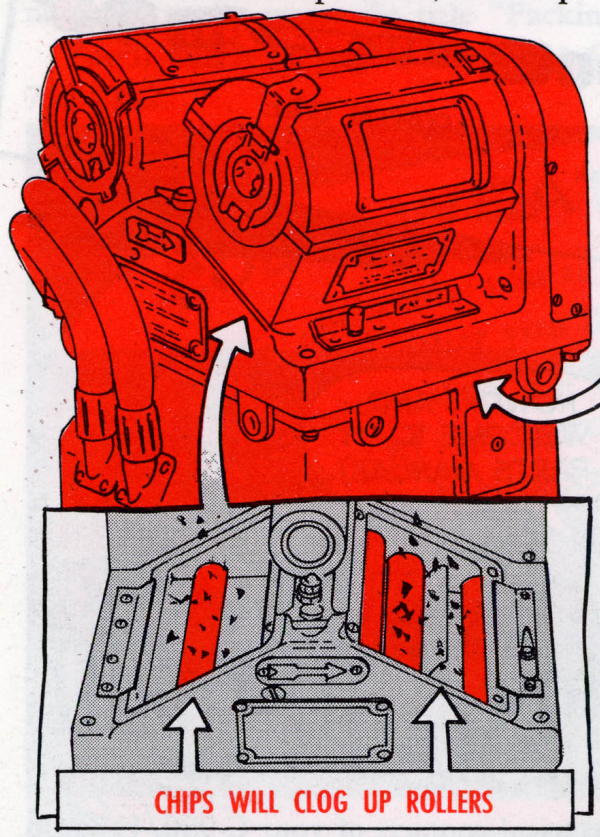
Cover, Connector, CW-339/U, FSN 5935-258-4449 will cure your problem. It's to be added to the C-980 parts manual, TM 11-5830-204-12P. However, the cover's a common item, and one ready reference for it is Change 3 to TM 11-5820-283-20P (23 Jul 59) on the RT-66 thru -68 receiver transmitters.

FRIGID FILM'LL FLAKE



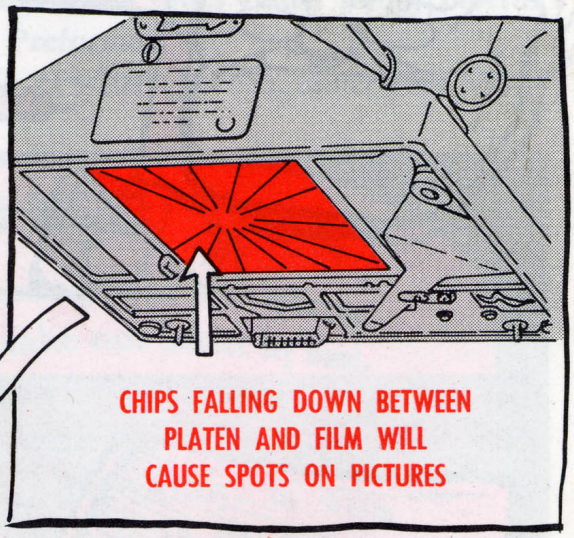
When you have a real cool spool in your KA-30A still picture camera's holder (cassette) . . . watch it!

The cold film becomes brittle and rough handling while feeding the film in will make it chip. Then, the chips clog up the rollers in the LA-134A aircraft camera body driver and stop 'em from turning.



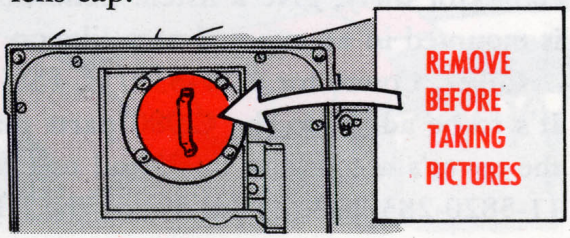
A coupla other things can happen with free flying flakes of film inside the LA-134A.

The chips can fall between the platen and the film, making spots on the pictures . . . and if the chips are sucked into the vacuum hose, stopping it up, you'll have a blurred batch of pictures.

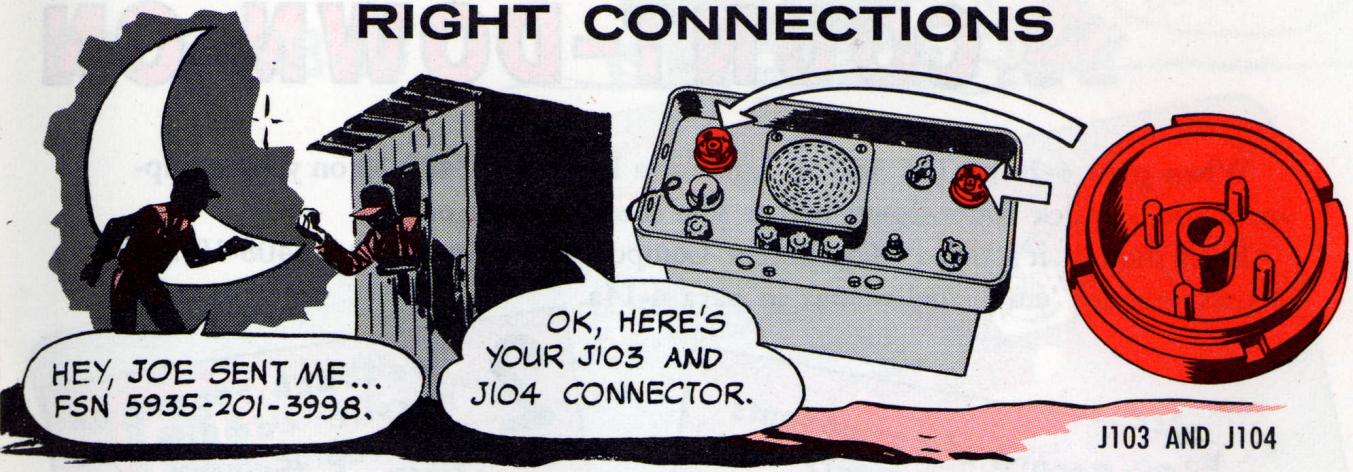


Your best bet's to store both the film holder and camera in a warm place before and after the picture-taking mission. This'll keep that film warm for winding without chipping.

Before mating up the LA-134A with the LA-130A or LA-131A aerial camera lens cone, pull off the rear-element lens cap.



RIGHT CONNECTIONS



J103 AND J104

Don't get yourself into a stew if you're issued an AN/GRR-5 receiving set and then find you can't hook up the power cables AC CX1358, battery cable CX1360 and vehicle battery cable CX1359A U to the old type J103 and J104 connectors on the power supply PP-308/URR.

Instead . . . get in touch with your support people. The right J103 receptacle connector's in TM 11-5820-284-35P (19 May 59).

The J104 receptacle connector's the same as the J103. Both come under FSN 5935-201-3998.

ANGRY - 19 REMINDERS

If you don't want your Angry-19—or any setup using it—to spit back at you, watch it when you rig up the AB-15 mast base.

Like, forget the ground strap. Let it off. Lose it.

If you rig the ground strap, and you're using the GRC-19 components on a tracked vehicle, you can load the vehicle, which isn't too healthy.

And just in case you missed it, para 40e, p 29 of TM 11-5820-295-10 (Jun 63) should read: "Set the T-195 (*)/GRC-19 SERVICE SELECTOR switch to VOICE/FSK."

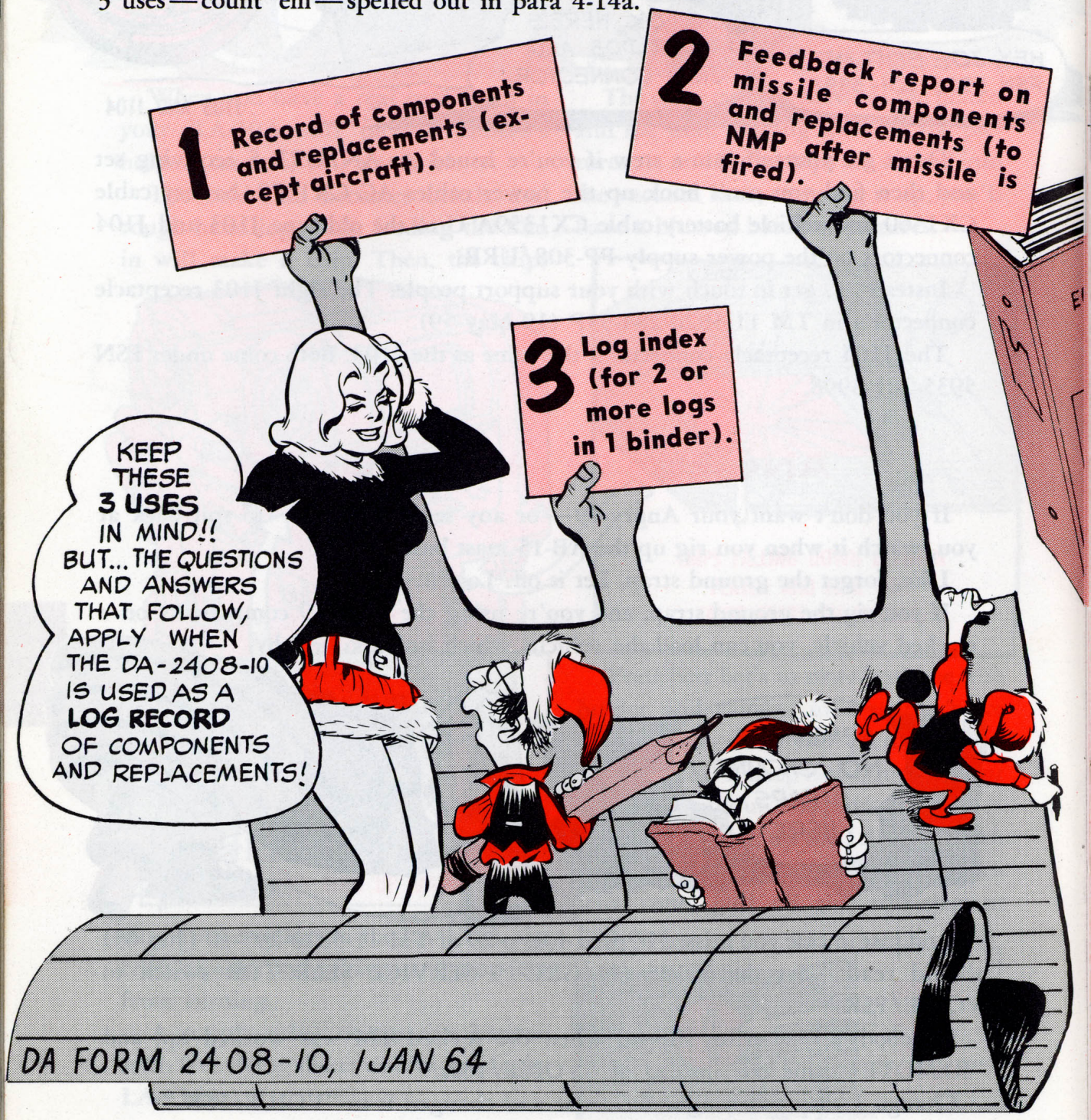
Somebody's typewriter slipped when the revised TM was worked up, and "REMOTE" came out instead of "VOICE/FSK."

Change 1 (Sep 64) caught the error and changed it to "VOICE/FSK."

COUNT-DOWN ON

When para 4-26 of TM 38-750 calls for a DA Form 2408-10 on your equipment, do a quick count-down before you start an entry on it.

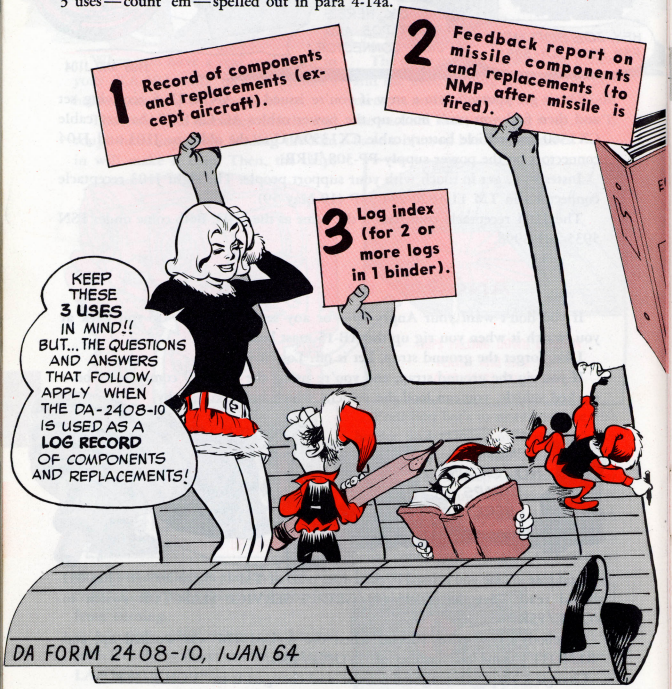
Even though it's titled "Equipment Component Register," DA 2408-10 has 3 uses—count 'em—spelled out in para 4-14a.



COUNT-DOWN ON DA 2408-10

When para 4-26 of TM 38-750 calls for a DA Form 2408-10 on your equipment, do a quick count-down before you start an entry on it.

Even though it's titled "Equipment Component Register," DA 2408-10 has 3 uses—count 'em—spelled out in para 4-14a.



DO IT NOW

Q When DA 2408-10 is used as a component replacement record, do we list the components now — or only at the time we make a replacement?

A As TM 38-750 (Jan 64) says in para 4-14b(1), you fill out the DA 2408-10 "immediately upon receipt of the end item of equipment." And, like the TM says in para 4-14c(1)(f), you list in the first "date/serial number" column "all applicable serial numbers and date the end item was received."

You make these entries **now** (unless components are already listed on DA 2408-10 when the equipment is issued to you).

Later—when you replace the components that came with the end item—you'll then "enter new serial numbers and dates when replacement took place," as spelled out in para 4-14c(1)(f).

THAT "R" NOTE

Q Does the note in para 4-14b(1), referring to recoverable components, mean that all recoverable components should be listed on DA 2408-10 when it's used as a component replacement record?

A Nope. That note was meant to be only a guide to help locate the right components for DA 2408-10. (It'll probably be removed in a future change to the TM).

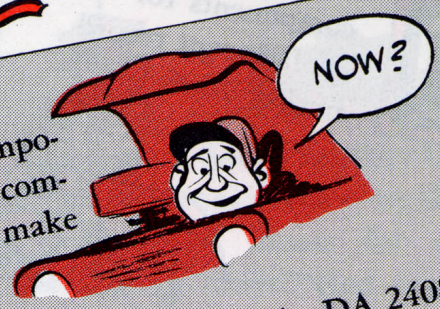
Note. Recoverable components are so designated in equipment technical manuals.

TM 38-750

PS MORE

DA 2408-10

DO IT NOW



Q When DA 2408-10 is used as a component replacement record, do we list the components now — or only at the time we make a replacement?

A As TM 38-750 (Jan 64) says in para 4-14b(1), you fill out the DA 2408-10 "immediately upon receipt of the end item of equipment." And, like the TM says in para 4-14c(1)(f), you list in the first "date/serial number" column "all applicable serial numbers and date the end item was received."

You make these entries **now** (unless components are already listed on DA 2408-10 when the equipment is issued to you).

Later—when you replace the components that came with the end item—you'll then "enter new serial numbers and dates when replacement took place," as spelled out in para 4-14c(1)(f).

THAT "R" NOTE

Q Does the note in para 4-14b(1), referring to recoverable components, mean that all recoverable components should be listed on DA 2408-10 when it's used as a component replacement record?

A Nope. That note was meant to be only a guide to help locate the right components for DA 2408-10. (It'll probably be removed in a future change to the TM).

Note. Recoverable components are so designated in equipment technical manuals.

TM 38-750

P.S. MORE

WHO'S GOT THE LIST?

Q Where do we get the list of components for the component replacement record on DA 2408-10?

A There is no "list," as such, but you'll note that para 4-14c(1)(d) says "**major** recoverable components." And para 4-14b(1) lists required components as "serial and/or lot numbered items capable of performing a complete function."

To help you pick out the right components for the DA 2408-10 list, it's recommended that you include (1) all engines, (2) all components except gun tubes for which usage data (hours, miles or starts) is needed to make the equipment ESC rating, and (3) other components required by your local commander.

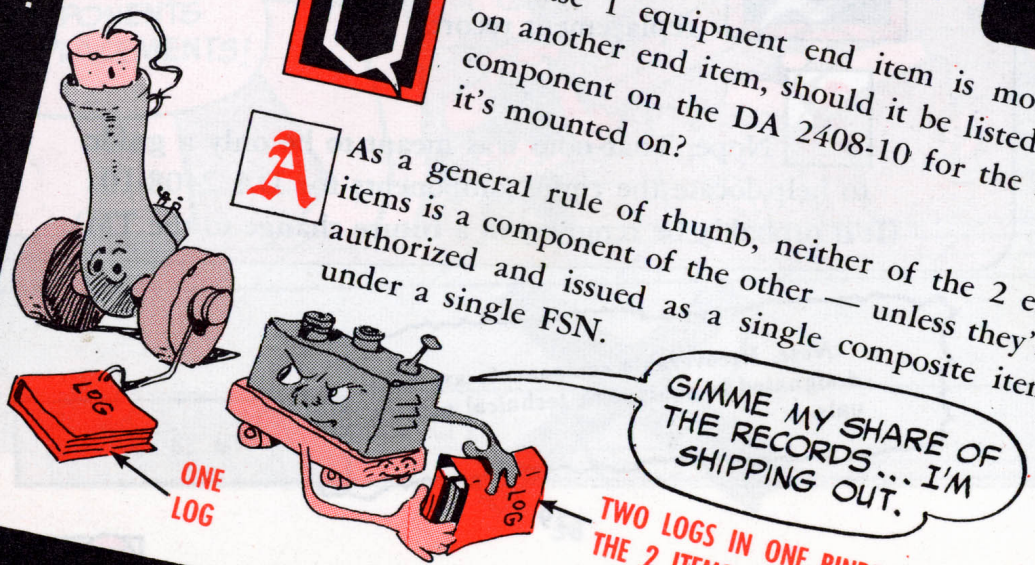
It boils down to this: Your equipment ESC is your best guide in making a list of components on DA 2408-10.

In fact, it may be best to record odometer and hourmeter replacements on DA 2408-10—whether serially numbered or not—even though they're not required. Otherwise you may have to compare dates and hours/miles entries on the monthly DA 2408-1 to get the service life of ESC-rated components, since the log copy of DA 2408-3 gets tossed out after a year and there's no requirement to enter hours or miles on DA 2408-6.

END ITEM OR COMPONENT?

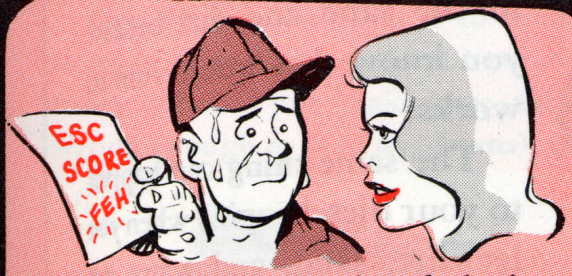
Q In case 1 equipment end item is mounted on another end item, should it be listed as a component on the DA 2408-10 for the item it's mounted on?

A As a general rule of thumb, neither of the 2 end items is a component of the other — unless they're authorized and issued as a single composite item under a single FSN.



ESC's ARE NOT REPLACEMENT GUIDES

A DRAMA IN ONE REEL
STARRING
Connie Rodd

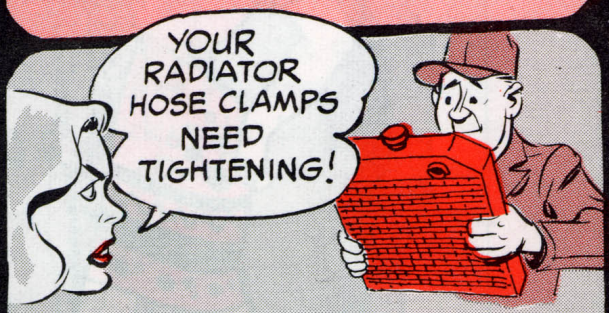


Despite what you've heard, the fountain of youth is not filled with ESC.

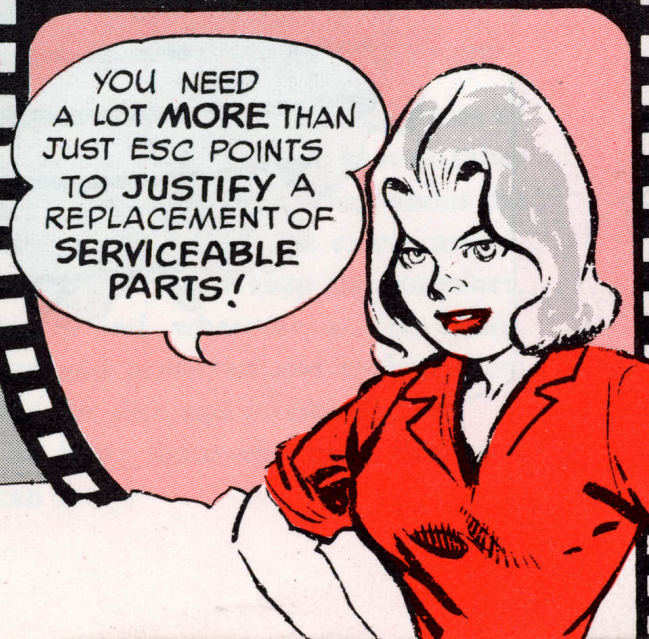
You can't use a low ESC score as an excuse to put new parts on old end items. That's why para 1b of each ESC manual says:

"b. This manual . . . **does not of itself authorize replacement of components.** Loss of points due to age or usage does not justify the replacement of an otherwise qualified serviceable component."

Equipment Serviceability Criteria just rate your equipment — by the point system — on its fitness for combat. Those Green-Amber-Red categories measure the capability of your equipment to perform in combat for at least 90 days. ESC ratings are not intended to be a reflection on your unit's maintenance work.



So while the color category of your equipment may show that it's unready for combat, the same category does not always mean your equipment's ready for a maintenance repair-by-replacement job.



A STORY DIRT

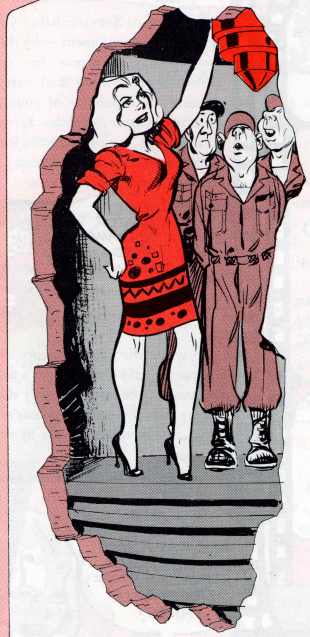
You wouldn't think of dropping the innards of your watch in the sand and dirt because you know that would ruin its works.

The same thing can happen to your diesel engine when you let dirt, sand, and water get into the fuel. It plays havoc with that fuel injection system.

If you had X-ray eyes you'd see that the fuel pump and fuel injection valve or nozzle have parts machined to tolerances so small that you can't even "mike" them. A little dirt or water in the pump or valve can therefore deadline a diesel faster than Charlie can do it.

So remember—do everything possible to keep your diesel fuel free of dirt and water!

A STORY DIRTY BUT TRUE (about diesel fuel)



You wouldn't think of dropping the innards of your watch in the sand and dirt because you know that would ruin its works.

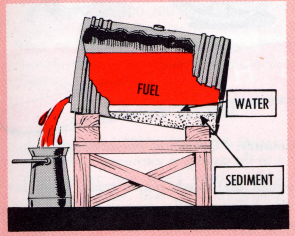
The same thing can happen to your diesel engine when you let dirt, sand, and water get into the fuel. It plays havoc with that fuel injection system.

If you had X-ray eyes you'd see that the fuel pump and fuel injection valve or nozzle have parts machined to tolerances so small that you can't even "mike" them. A little dirt or water in the pump or valve can therefore deadline a diesel faster than Charlie can do it.

So remember—do everything possible to keep your diesel fuel free of dirt and water!

Well, maybe you can't drive up to a nice clean, well-protected storage tank and say "fill 'er up." Even if you have to take the fuel right out of a drum that looks like it's trying to burrow in the sand, there's something you can do to discourage that burrowing and it'll help to keep the fuel clean.

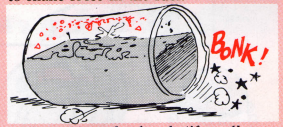
One of the best ways is to build a number of racks (they don't have to be fancy jobs . . . just make sure they're strong enough to hold the drums), then



mount the drums on them. A good idea is to block the drums up on the rack with 2 pieces of wood. The piece for the front should be thicker than the one to the rear. That way any water or dirt in the fuel will settle at the rear bottom of the drum and stay there as long as you don't shake it.

If possible, let the fuel in the drums settle for about 24 hours before you draw it off to use. That's why you should make some extra racks while you're at it. When you have to pack up to move, take the racks with you.

When you're handling those drums, just pretend you've got a crate of eggs. Dropping and rough handling can cause scale and other gook on the inside to shake loose in the fuel.

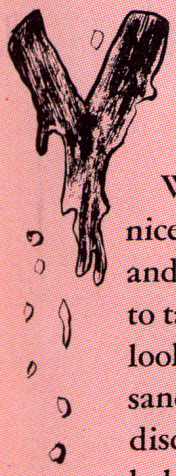


Use a clean dry brush (if at all possible) to brush the bung cap and all around it before you remove the cap. A rag will pick up dirt but it may leave lint or threads which could drop into the fuel. And always keep the bung cap screwed on tight when you're not drawing off fuel.

Using buckets, pails, cans and other assorted containers to fill your diesel

tanks is one of your worst sources of fuel contamination. If you have no other choice but to use them, then about the best you can do is to be extra careful. That means you'll keep the container, funnel, and whatever you're using, clean and protected and eyeball them often for dirt and moisture.

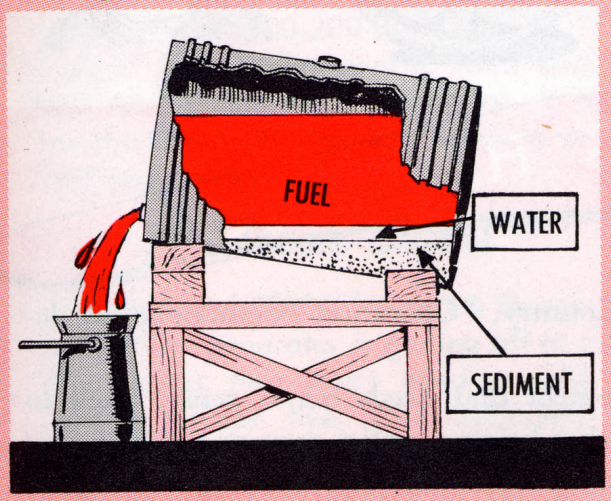
So how about changing this to a clean story?



BUT TRUE (about diesel fuel)

Well, maybe you can't drive up to a nice clean, well-protected storage tank and say "fill 'er up." Even if you have to take the fuel right out of a drum that looks like it's trying to burrow in the sand, there's something you can do to discourage that burrowing and it'll help to keep the fuel clean.

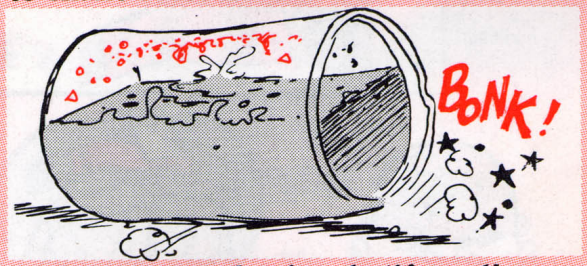
One of the best ways is to build a number of racks (they don't have to be fancy jobs . . . just make sure they're strong enough to hold the drums), then



mount the drums on them. A good idea is to block the drums up on the rack with 2 pieces of wood. The piece for the front should be thicker than the one to the rear. That way any water or dirt in the fuel will settle at the rear bottom of the drum and stay there as long as you don't shake it.

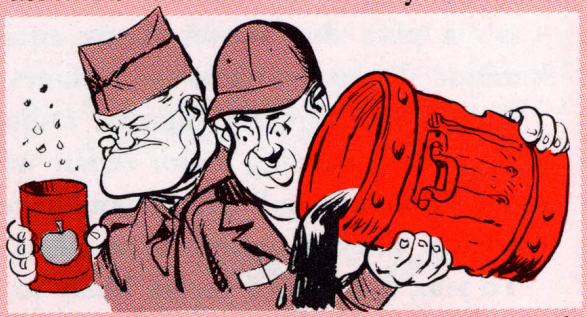
If possible, let the fuel in the drums settle for about 24 hours before you draw it off to use. That's why you should make some extra racks while you're at it. When you have to pack up to move, take the racks with you.

When you're handling those drums, just pretend you've got a crate of eggs. Dropping and rough handling can cause scale and other gook on the inside to shake loose in the fuel.



Use a clean dry brush (if at all possible) to brush the bung cap and all around it before you remove the cap. A rag will pick up dirt but it may leave lint or threads which could drop into the fuel. And **always** keep the bung cap screwed on tight when you're not drawing off fuel.

Using buckets, pails, cans and other assorted containers to fill your diesel



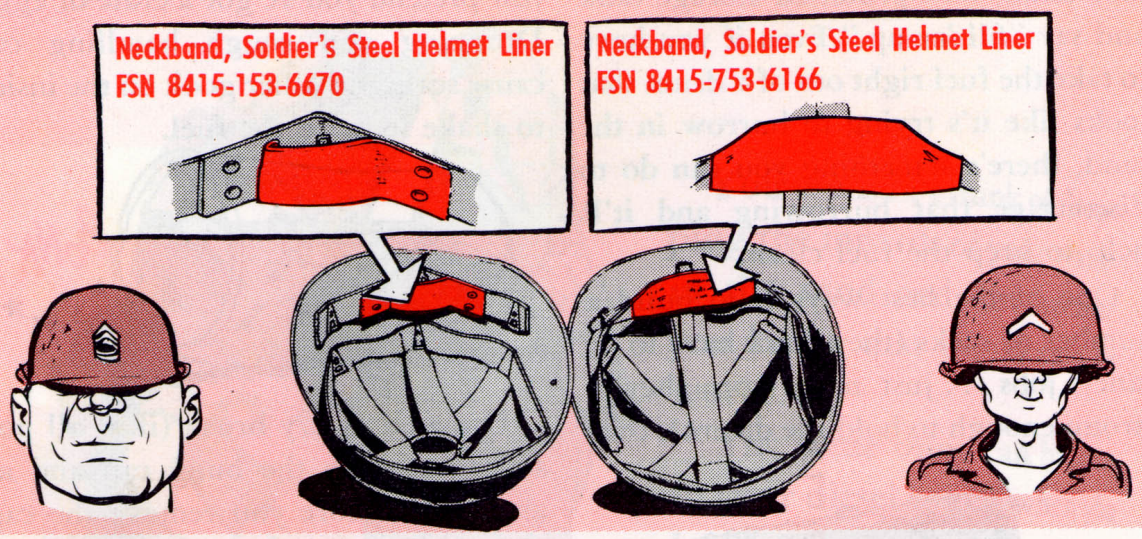
tanks is one of your worst sources of fuel contamination. If you have no other choice but to use them, then about the best you can do is to be extra careful. That means you'll keep the container, funnel, and whatever you're using, clean and protected and eyeball them often for dirt and moisture.

So how about changing this to a clean story?

HOW TO MATCH 'EM

The helmet liner, FSN 8415-240-2512, has 2 different suspension systems on the inside. The neckbands for the 2 liners are not interchangeable.

Here's how you match 'em:



'BOOMERANG' HELPS YOU

If you're sloshing around Charlie Country, "Operation Boomerang" is designed to help you.

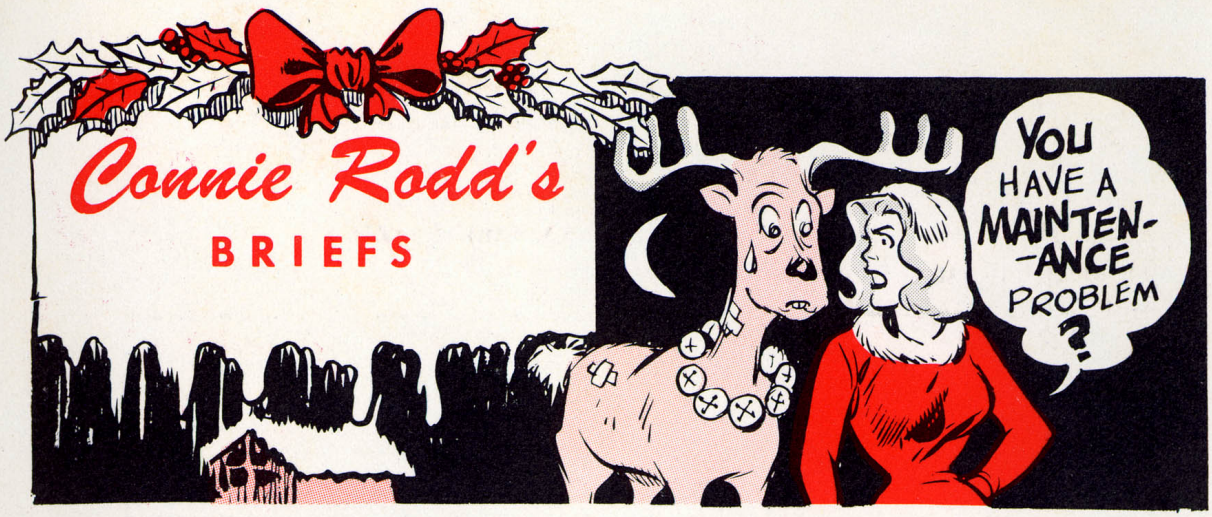
It's a plan that moves Army equipment that needs major repair back to Stateside depots real fast—in planes that bring supplies over to RVN.

Things like aircraft engines, radios, compressors, generators, transmissions . . . anything needing major repair which will fit in available aircraft . . . move under "Boomerang." The depots have 30 days to complete most jobs and ship 'em back. They're getting some items back in 48 hours!

To you, this means you're likely to have real good operating equipment any time you need it.

It also means one other thing: When you let loose of a piece of equipment that's likely to go to CONUS under "Boomerang," you better clean it up real good. 'Cause if an item, say a generator, reaches the States all glopped up with VN gluck, then it, the airplane and its crew will be guarantined until everything is strictly sanitary.

'Nother thing . . . when you've got any item of equipment that's got to go to DS (and maybe further) for repair, move it out. Get rid of it. It'll never do you any good cluttering up your area. You won't see those boomerangs coming back unless you throw them first.



Urgent MWO

OK, so who's got 'em? Who's got those 3-KW generators with Wisconsin engine Model MAENLD that haven't been given new connecting rods by Urgent MWO 5-6100-200-30/1 (Dec 65)? Eyeball your Hollingsworth, Kurz and Root or Szemco 3-KW generator. If it has the Wisconsin engine, it needs to be modified soonest.

A Fresh Start

Your Model 52300 Stewart & Stevenson 45-KW generator is getting off to a new starter that won't need a cold-starting heater line. FSN 2920-900-1631 gets you the new starter, which replaces FSN 2920-657-7451. Just cap the heater line for the old type starter when you get the new one.

M113 Air Cleaner Shell

If you have an M113 personnel carrier (or any vehicle in that family such as the M577 or the M106), here's good news. The metal bucket protecting your air cleaner filter element has been put in supply as FSN 2940-930-6207 Shell, Air Cleaner.

FSN for HD-264 Fuse

Gettin' that fickle feeling trying to find a 1½-amp fuse for your AN/MPQ-4A radar set's HD-264 electric desiccant dehydrator? Don't sweat it. FSN 5920-787-8595, listed on Page 72 of Fed Cat C5920-IL-A (Jul 66), will get you one.

PU-619/M Covered

Need a tarp for your PU-619/M trailer-mounted generator sets? Although the FSN doesn't show up in the PU's TM 5-6115-365-15 (May 66) yet, it can be had by requisitioning Tarpaulin, trailer, FSN 2540-914-2558.

"Wings" for Air Crewmen

Aircraft Crewman Badge will be available about March, 1967. Take a gander at Change 11 (20 Dec 65) to AR 672-5-1 to see if you're qualified to get a set. Then keep the eyes peeled for the FSN in Fed Cat 8455 and order your "wings" thru regular supply channels.

Would You Stake Your Life right now on the Condition of Your Equipment?

SEND YOUR EIR OVER...
NATIONAL MAINTENANCE POINT
AND OVER...
AND OVER AGAIN
WHEN YOU HAVE REPEATED EQUIPMENT TROUBLES
BUT KEEP AN EYE ON THE EIR DIGESTS! YOU MAY SPOT THE FIX FOR YOUR SPECIFIC PIECE OF EQUIPMENT.